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WEB-ENABLED VALUE BEARING ITEM PRINTING

## CROSS-REFERENCE TO RELATED APPLICATIONS

5 This patent application claims the benefit of the filing date of United States Provisional Patent Application Serial No. 60/218,553, filed July 13, 2000 and entitled "CLIENT SOFTWARE", the entire contents of which are hereby expressly incorporated by reference. This patent application is also a Continuation-In-Part of United States pending Patent Application Serial No. 10 09/585,025, filed June 1, 2000 and entitled "ON-LINE VALUE BEARING ITEM PRINTING", which claims the benefit of the filing date of United States Provisional Patent Applications Serial Nos. 60/136,924, filed June 1, 1999 and entitled "INTERNET POSTAGE SYSTEM", 60/139,153, filed June 14, 1999, and entitled "CLIENT SOFTWARE AND USER INTERFACE FOR INTERNET POSTAGE SYSTEM", AND 15 60/160,491, October 20, 1999, and entitled "SECURE AND RECOVERABLE DATABASE FOR ON-LINE POSTAGE SYSTEM", the entire contents of which are hereby expressly incorporated by reference.

20  
FIELD OF THE INVENTION

The present invention relates to secure printing of value-bearing items (VBI) preferably, postage. More specifically, the invention relates to a web-enabled graphical user interface (GUI) for printing of VBI in a computer network environment.

25  
BACKGROUND OF THE INVENTION

A significant percentage of the United States Postal Service (USPS) revenue is from metered postage. Metered postage is generated by utilizing postage meters that print a special mark, also known as postal indicia, on mail pieces. Generally, printing postage and any VBI can be carried out by using mechanical meters or computer-based systems.

30 With respect to computer-based postage processing systems, the USPS under the Information-Based Indicia Program (IBIP) has

1 published specifications for IBIP postage meters that identify  
a special purpose hardware device, known as a Postal Security  
Device (PSD) that is generally located at a user's site. The  
PSD, in conjunction with the user's personal computer and  
5 printer, functions as the IBIP postage meter. The USPS has  
published a number of documents describing the PSD  
specifications, the indicia specifications and other related and  
relevant information. There are also security standards for  
printing other types of VBI, such as coupons, tickets, gift  
10 certificates, currency, money orders, voucher and the like.

A significant drawback of existing hardware-based systems  
is that a new PSD must be locally provided to each new user,  
which involves significant cost. Furthermore, if the additional  
PSD breaks down, service calls must be made to the user location.  
15 In light of the drawbacks in hardware-based postage metering  
systems, a software-based system has been developed that does not  
require specialized hardware for each user. The software-based  
system meets the IBIP specifications for a PSD, using a  
centralized server-based implementation of PSDs utilizing one or  
20 more cryptographic modules. The system also includes a database  
for all users' information. The software-based system, however,  
has brought about new challenges.

The software-based system should be able to handle secure  
communications between users and the database. The system should  
25 also be user friendly and be able to provide the user with a  
step-by-step process for installing the client software,  
registering with the system, printing the postage value,  
maintaining and monitoring the user account information, and the  
like.

30 Therefore, there is a need for a new method and apparatus  
for implementation of VBI printing via a web-enabled user  
friendly GUI with a variety of selectable options.

#### SUMMARY OF THE INVENTION

1 In accordance with one aspect of the present invention, a  
web-enabled VBI printing system that includes one or more  
cryptographic modules and a central database has been designed.  
The cryptographic modules serve the function of the PSDs and are  
5 capable of implementing a variety of required security standards.  
A HTML integrated client system provides a user friendly GUI for  
facilitating the interface of the user to the system. The GUI  
system includes wizards that help the user step-by-step with  
processes of installation, registration, and printing

10 In one aspect, the invention describes a web-enabled system  
for printing a VBI comprising a web-enable client subsystem for  
interfacing with a user. The integrated client system comprises  
a graphical user interface (GUI) for installing software for  
printing the VBI; a GUI for registering the user in the system;  
15 and a GUI for managing the printing of the VBI. The system also  
includes a server subsystem capable of communicating with the  
client subsystem over the Internet for authorizing the client  
subsystem to print the VBI.

20 Other features of the present invention include a browser-  
based GUI for on-line shopping, wherein the user information  
entered in the client system can be uploaded to the on-line  
shipping system. A browser-based GUI for shipping tools for  
facilitating shipping of packages; and a browser-based GUI for  
business tools are also provided in some embodiments of the  
25 present invention.

In another aspect, the invention describes a method for  
printing a VBI over the Internet including a web-enabled client  
system and a server system. The method comprising the steps of:  
displaying a first GUI by the client system for registering a  
30 user; establishing communication with the server via the  
Internet; entering user information in the first GUI; and  
communicating the entered user information to the server.

It is to be understood that the present invention is useful  
for printing not only postage, but any VBIs, such as coupons,  
35 tickets, gift certificates, currency, voucher and the like.

## 1 BRIEF DESCRIPTION OF THE DRAWINGS

The objects, advantages and features of this invention will become more apparent from a consideration of the following detailed description and the drawings, in which:

5 FIG. 1 is an exemplary block diagram for the client/server architecture of one embodiment of the present invention;

FIG. 2 is an exemplary block diagram of a remote user computer connected to a server via Internet according to one embodiment of the present invention;

10 FIG. 3 is an exemplary flow diagram of an installation wizard;

FIG. 4 is an exemplary block diagram of servers, databases, and services according to one embodiment of the present invention;

15 FIGS. 5A-5B are exemplary interfaces for application plugins;

FIGS. 6A-6E are exemplary interfaces for Internet connection options;

20 FIGS. 7A-7C are exemplary process flow diagrams for a getting started wizard;

FIG. 7D is an exemplary dialog box for allowing a user to cancel a getting started wizard;

FIGS. 8A-8B are exemplary interfaces for registration;

25 FIGS. 9A-9N are exemplary interfaces for registration and receiving user information;

FIG 10A is an exemplary process flow diagram for a registration wizard;

FIGS. 10B-10O are exemplary interfaces for a registration wizard;

30 FIGS. 11A-11B are exemplary process flow diagrams for a print wizard;

FIGS. 11C-11L are exemplary interfaces for a printing wizard;

35 FIG. 12A is an exemplary process flow diagram for a re-registration process;

1           FIGs. 12B-12D are exemplary interfaces for a re-registration wizard;

          FIGs. 13A-13N are exemplary interfaces for a print wizard;

5           FIGs. 14A-14B are exemplary diagrams showing an indicium printed on an envelop;

          FIGs. 15A-15B are exemplary diagrams of an envelop with and without a graphic paced in the area to the left of the return address, respectively;

10          FIG. 15C is an exemplary interface for an envelop printing option;

          FIGs. 16A-16B are exemplary interfaces for addition of an address book;

          FIGs. 17A-17G are exemplary interfaces for messages;

          FIG. 18 is an exemplary interface for a main menu;

15          FIG. 19A is an exemplary process flow diagram for a change of address process;

          FIGs. 19B-19I are exemplary interfaces for change of address;

20          FIGs. 20A-20C are exemplary interfaces for change payment method;

          FIGs. 21A-21D are exemplary interfaces for change service plan;

          FIG. 21E is an exemplary interface for change e-mail information;

25          FIGs. 22A-22B are exemplary interfaces for password entry & verification;

          FIG. 23 is an exemplary interface for a meter withdrawal;

          FIG. 24 is an exemplary process flow diagram for a registration wizard;

30          FIGs. 25A-25C are exemplary interfaces for setting up a digital scale;

          FIG. 26 is an exemplary process flow for accessing a function or web page by an off-line user;

35          FIG. 27 is an exemplary process flow for accessing a function or web page by an on-line user;

1        FIG. 28 is an exemplary interface for Shipping Tools;  
      FIG. 29 is an exemplary interface for Business Tools;  
      FIG. 30 is an exemplary interface for Special Services; and  
      FIGS. 31A-31G are exemplary interfaces for address  
5        overriding.

#### DETAILED DESCRIPTION

      An exemplary on-line postage system is described in U.S.  
patent Application No. 09/163,993 filed September 15, 1998, the  
10        entire content of which is hereby incorporated by reference  
      herein. The on-line postage system includes an authentication  
      protocol that operates in conjunction with the USPS. The system  
      utilizes on-line postage system software comprising user code  
      that resides on a client system and controller code that resides  
15        on a server system. The on-line postage system allows a user to  
      print a postal indicium at home, at the office, or any other  
      desired place in a secure, convenient, inexpensive and fraud-free  
      manner. The system comprises a user system electronically  
      connected to a server system, which in turn is in communication  
20        with a USPS system.

      Each of the cryptographic modules may be available for use  
by any user. When a user requests a PSD service, one of the  
available modules is loaded with data belonging to the user's  
account and the transaction is performed. When a module is  
25        loaded with a user's data, that module becomes the user's PSD.  
      The database record containing each user's PSD data is referred  
to as the "PSD package". After each PSD transaction is  
completed, the user's PSD package is updated and returned to a  
database external to the module. The database becomes an  
30        extension of the module's memory and stores not only the items  
      specified by the IBIP for storage inside the PSD, but also the  
      user's personal cryptographic keys and other security relevant  
      data items (SRDI) and status information needed for operating  
      continuity. Movement of this sensitive data between the modules  
35

1 and the database is secured to ensure that PSD packages could not be compromised.

5 In one embodiment, the server system is remotely located in a separate location from the client system. All communications between the client and the server are preferably accomplished via the Internet. FIG. 1 illustrates a remote client system 220a connected to a server system 102 via the Internet 221. The client system includes a processor unit 223, a monitor 230, printer port 106, a mouse 225, a printer 235, and a keyboard 224. 10 Server system 102 includes Postage servers 109, Database 130, and cryptographic modules 110.

15 An increase in the number of servers within the server system 102 will not negatively impact the performance of the system, since the system design allows for scalability. The Server system 102 is designed in such a way that all of the business transactions are processed in the servers and not in the database. By locating the transaction processing in the servers, increases in the number of transactions can be easily handled by adding additional servers. Also, each transaction processed in 20 the servers is stateless, meaning the application does not remember the specific hardware device the last transaction utilized. Because of this stateless transaction design, multiple servers can be added to each appropriate subsystem in order to handle increased loads.

25 Furthermore, each cryptographic module is a stateless device, meaning that a PSD package can be passed to any device because the application does not rely upon any information about what occurred with the previous PSD package. Therefore, multiple cryptographic modules can also be added to each appropriate 30 subsystem in order to handle increased loads. A PSD package for each cryptographic module is a database record, stored in the server database, that includes information pertaining to one customer's service that would normally be protected inside a cryptographic module. The PSD package includes all data needed 35 to restore the PSD to its last known state when it is next loaded

1 into a cryptographic module. This includes the items that the  
IBIP specifications require to be stored inside the PSD,  
information required to return the PSD to a valid state when the  
record is reloaded from the database, and data needed for record  
5 security and administrative purposes.

In one embodiment, the items included in a PSD package  
include ascending and descending registers (the ascending  
register "AR" records the amount of postage that is dispensed or  
printed on each transaction and the descending register "DR"  
10 records the value or amount of postage that may be dispensed and  
decreases from an original or charged amount as postage is  
printed.), device ID, indicia key certificate serial number,  
licensing ZIP code, key token for the indicia signing key, the  
user secrets, key for encrypting user secrets, data and time of  
15 last transaction, the last challenge received from the client,  
the operational state of the PSD, expiration dates for keys, the  
passphrase repetition list and the like.

As a result, the need for specific PSDs being attached to  
specific cryptographic modules is eliminated. A Postal Server  
20 subsystem provides cryptographic module management services that  
allow multiple cryptographic modules to exist and function on one  
server, so additional cryptographic modules can easily be  
installed on a server. The Postal Sever subsystem is easy to  
scale by adding more cryptographic modules and using commonly  
25 known Internet load-balancing techniques to route inbound  
requests to the new cryptographic modules.

Referring back to FIG. 1, Postage servers 109 provide  
indicia creation, account maintenance, and revenue protection  
functionality for the on-line postage system. The Postage  
30 servers 109 include several physical servers in several distinct  
logical groupings, or services as described below. The  
individual servers could be located within one facility, or in  
several facilities, physically separated by great distance but  
connected by secure communication links.



1 Cryptographic modules 110 are responsible for creating PSDs  
and manipulating PSD data to protect sensitive information from  
disclosure, generating the cryptographic components of the  
digital indicia, and securely adjusting the user registers. When  
5 a user wishes to print VBI , for example, postage or purchase  
additional VBI or postage value, a user state is instantiated in  
the PSD implemented within one of the cryptographic modules 110.  
Database 111 includes all the data accessible on-line for indicia  
creation, account maintenance, and revenue protection processes.  
10 Postage servers 109, Database 130, and cryptographic modules 110  
are maintained in a physically secured environment, such as a  
vault.

FIG. 2 shows a simplified system block diagram of a typical  
Internet client/server environment used by an on-line postage  
system in one embodiment of the present invention. PCs 220a-220n  
15 used by the postage purchasers are connected to the Internet 221  
through the communication links 233a-233n. Each PC has access  
to one or more printers 235. Optionally, as is well understood  
in the art, a local network 234 may serve as the connection  
between some of the PCs, such as the PC 220a and the Internet 221  
20 or other connections. Servers 222a-222m are also connected to  
the Internet 221 through respective communication links. Servers  
222a-222m include information and databases accessible by PCs  
220a-220n. The on-line VBI system of the present invention  
25 resides on one or more of Servers 222a-222m.

In this embodiment, each client system 220a-220m includes  
a CPU 223, a keyboard 224, a mouse 225, a mass storage device  
231, main computer memory 227, video memory 228, a communication  
interface 232a, and an input/output device 226 coupled and  
30 interacting via a communication bus. The data and images to be  
displayed on the monitor 230 are transferred first from the video  
memory 228 to the video amplifier 229 and then to the monitor  
230. The communication interface 232a communicates with the  
servers 222a-222m via a network link 233a. The network link  
35

1 connects the client system to a local network 234. The local network 234 communicates with the Internet 221.

In one embodiment, a customer, preferably licensed by the USPS and registered with an IBIP vendor (such as Stamps.com),  
5 sends a request for authorization to print a desired amount of VBI, such as postage. The server system verifies that the user's account holds sufficient funds to cover the requested amount of postage, and if so, grants the request. The server then sends authorization to the client system. The client system then sends  
10 image information for printing of a postal indicium for the granted amount to a printer so that the postal indicium is printed on an envelope or label.

When a client system sends a VBI print request to the Server, the request needs to be authenticated before the client system is allowed to print the VBI, and while the VBI is being  
15 printed. The client system sends a password (or passphrase) entered by a user to the Server for verification. If the password fails, a preferably asynchronous dynamic password verification method terminates the session and printing of the VBI is aborted. Also, the Server system communicates with a  
20 system located at a certification authority for verification and authentication purposes.

In one embodiment, the information processing components of the on-line postage system include a client system, a postage server system located in a highly secure facility, a USPS system  
25 and the Internet as the communication medium among those systems. The information processing equipment communicates over a secured communication line.

Preferably, the security and authenticity of the information  
30 communicated among the systems are accomplished on a software level through the built-in features of a Secured Socket Layer (SSL) Internet communication protocol. An encryption hardware module embedded in the server system is also used to secure information as it is processed by the secure system and to ensure  
35 authenticity and legitimacy of requests made and granted.

1       The on-line VBI system does not require any special purpose  
hardware for the client system. The client system is implemented  
in the form of software that can be executed on a user computer  
(client system) allowing the user computer to function as a  
5       virtual VBI meter. The software can only be executed for the  
purpose of printing the VBI indicia when the user computer is in  
communication with a server computer located, for example, at a  
VBI meter vendor's facility (server system). The server system  
is capable of communicating with one or more client systems  
10       simultaneously.

15       In one embodiment of the present invention, the  
cryptographic modules 110 are FIPS 140-1 certified hardware cards  
that include firmware to implement PSD functionality in a  
cryptographically secure way. The cryptographic modules are  
inserted into any of the servers in the Postal Server  
Infrastructure. The cryptographic modules are responsible for  
creating PSDs and manipulating PSD data to generate and verify  
digitally signed indicia. Since the PSD data is created and  
signed by a private key known only to the module, the PSD data  
20       may be stored externally to the cryptographic modules without  
compromising security.

25       The on-line VBI system is based on a client/server  
architecture. Generally, in a system based on client/server  
architecture the server system delivers information to the client  
system. That is, the client system requests the services of a  
generally larger computer. In one embodiment, the client is a  
local personal computer and the server is a more powerful group  
of computers that house the information. The connection from the  
client to the server is made via a Local Area Network, a phone  
30       line or a TCP/IP based WAN on the Internet. A primary reason to  
set up a client/server network is to allow many clients access  
to the same applications and files stored on the server system.

35       In one embodiment, Postage servers 109 include a string of  
servers connected to the Internet, for example, through a T1  
line, protected by a firewall. The firewall permits a client

1 system to communicate with a server system, only if the  
information packet transmitted by the client system complies with  
a security policy set by the server system. The firewall not  
only protects the system from unauthorized users on the Internet,  
5 it also separates the Public Network (PUBNET) from the Private  
Network (PRVNET). This ensures that packets from the Internet  
will not go to any location but the PUBNET. The string of  
servers form the different subsystems of the on-line postal  
system. The services provided by the different subsystems of the  
10 on-line postage system are designed to allow flexibility and  
expansion and reduce specific hardware dependancy.

The Database subsystem is comprised of multiple databases.  
FIG. 4 illustrates an overview of the on-line VBI system which  
includes the database subsystems. Database 411 includes the  
15 Affiliate DBMS and the Source IDs DBMS. The Affiliate DBMS  
manages affiliate information (e.g., affiliate's name, phone  
number, and affiliate's website information) that is stored on  
the Affiliate Database. Using the data from this database,  
marketing and business reports are generated. The Source IDs  
20 Database contains information about the incoming links to the  
vendor's website (e.g., partners' information, what services the  
vendor offers, what marketing program is associated with the  
incoming links, and co-branding information). Using the data  
from this database, marketing and business reports are generated.

25 The Online Store Database 412 contains commerce product  
information, working orders, billing information, password reset  
table, and other marketing related information. Website database  
410 keeps track of user accesses to the vendor website. This  
database keeps track of user who access the vendor website, users  
30 who are downloading information and programs, and the links from  
which users access the vendor website. After storing these data  
on the website Database 410, software tools are used to generate  
the following information:

- Web Site Status
- 35 • Web Site Reports

- 1     •     Form Results
- Download Successes
- Signup, Downloads, and Demographic Graphs
- Web Server Statistics (Analog)
- 5     •     Web Server Statistics (Web Analyzer)

Offline database 409 manages the VBI (e.g., postal) data except meter information, postal transactions data, financial transactions data (e.g., credit card purchases, free postage issued, bill credits, and bill debits), customer marketing information, commerce product information, meter license information, meter resets, meter history, and meter movement information. Consolidation Server 413 acts as a repository for data, centralizing data for easy transportation outside the vault 400. The Consolidation Server hosts both file and database services, allowing both dumps of activity logs and reports as well as a consolidation point for all database data. The Offline Reporting Engine MineShare Server 415 performs extraction transformation from the holding database that received transaction data from the Consolidated Database (Commerce database 406, Membership database 408, and Postal Database 407). Also, the Offline Reporting Engine MineShare Server handles some administrative tasks. Transaction data in the holding database contains the transaction information about meter licensing information, meter reset information, postage purchase transactions, and credit card transactions. After performing extraction transformation, business logic data are stored on Offline Database 409. Transaction reports are generated using the data on the Offline Database. Transaction reports contain marketing and business information.

The Data Warehouse database 414 includes all customer information, financial transactions, and aggregated information for marketing queries (e.g., how many customers have purchased postage). In one embodiment, commerce Database 406 includes a Payment Database, an E-mail Database, and a Stamp Mart Database. The E-mail DBMS manages access to the contents of e-mail that

1 were sent out to everyone by vendor servers. The Stamp Mart  
database handles order form processing. The E-commerce Server  
404 provides e-commerce related services on a user/group  
permission basis. It provides commerce-related services such as  
5 payment processing, pricing plan support and billing as well as  
customer care functionality and LDAP membership personalization  
services. A Credit Card Service is invoked by the E-commerce  
Server 404 to authorize and capture funds from the customer's  
credit card account and to transfer them to the vendor's merchant  
10 bank. A Billing Service is used to provide bills through e-mail  
to customers based on selected billing plans. An ACH service runs  
automatically at a configurable time. It retrieves all pending  
ACH requests and batches them to be sent to bank for postage  
purchases (i.e. money destined for the USPS), or Chase for fee  
15 payments which is destined for the vendor account.

The E-commerce DBMS 406 manages access to the vendor  
specific Payment, Credit Card, and Email Databases. A Membership  
DBMS manages access to the LDAP membership directory database 408  
that hosts specific customer information and customer membership  
20 data. A Postal DBMS manages access to the Postal Database 407  
where USPS specific data such as meter and licensing information  
are stored. A Postal Server 401 provides secure services to the  
Client, including client authentication, postage purchase, and  
indicia generation. The Postal Server requires cryptographic  
25 modules to perform all functions that involve client  
authentication, postage purchase, and indicia generation.

Postal Transaction Server 403 provides business logic for  
postal functions such as device authorization and postage  
purchase/register manipulation. The Postal Transaction Server  
30 requires the cryptographic modules to perform all functions.  
There are four Client Support Servers. Address Matching Server  
(AMS) 417 verifies the correct address specified by a user.  
When the user enters a delivery address or a return address using  
the client software, the user does not need the address matching  
35 database on the user's local machine to verify the accuracy of

1 the address. The Client software connects to the vendor's server and uses the central address database obtained from the USPS to verify the accuracy of the address.

5 When a user chooses to validate address information from an address book, AMS converts different address formats into a format that is acceptable by the USPS Address Matching Database. Alternatively, the user may enter (type) an address. If the address entered or chosen by the user cannot be successfully validated, the USPS Address Matching Database returns a valid  
10 city, state, and ZIP information. Instead of rejecting the incorrect addresses, AMS provides the user with an option to override the incorrect address by concatenating the validated city, state, and ZIP information and the original street information. Also, AMS returns the override address in the  
15 address book format that can be easily stored in the respective address book.

The Client Support Servers 417 provides the following services: a Pricing Plan service, an Auto Update service, and a Printer Config service. The Pricing Plan Service provides  
20 information on pricing plans and payment methods available to the user. It also provides what credit cards are supported and whether ACH is supported. This information is represented preferably using a plain text format. The Auto Update Service verifies whether the user is running the latest Client Software.  
25 If there is newer Client Software, the Auto Update Server downloads the new patches to the user computer. The Client Support Database has tables for the client software update information. This information is represented using a plain text format. Before the user tries to print postage, the user sends  
30 his or her printer driver information over the Internet in plain text. A Printer Config Service looks up the printer driver information in the Printer Driver Database to determine whether the printer driver is supported or not. When the user tries to configure the printer, the user prints a test envelope to test  
35 whether the postage printing is working properly or not. This

1 test envelope information is sent over the Internet in plain text  
and is stored in the Client Support Database.

5 MeterGen server 422 makes calls into the cryptographic  
module to create sufficient meters to ensure that the vendor can  
meet customer acquisition demands. SMTP Server 418 communicates  
with other SMTP servers, and it is used to forward e-mail to  
users. Gatekeeper Server works as a proxy server by handling the  
security and authentication validation for the smart card users  
to access customer and administration information that reside in  
10 the vault. The Proxy Server 423 uses the Netscape™ Enterprise  
SSL library to provide a secure connection to the vault 400.  
Audit File Server 419 acts as a repository for module transaction  
logs. The Audit File Server verifies the audit logs that are  
digitally signed. The audit logs are verified in real time as  
15 they are being created. Postal Server writes audit logs to a  
shared hard drive on the Audit File Server. After these logs are  
verified, the Audit File Server preferably moves them from the  
shared hard drive to a hard drive that is not shared by any of  
the vendor servers.

20 Provider Server provides reporting and external  
communication functionality including the following services.  
CMLS Service forwards license applications and it processes  
responses from CMLS. The CMLS Service uses cryptographic  
functions provided by the Stamps.com Crypt library to decrypt the  
25 user's SSN/Tax ID/Employee ID. CMRS Service reports meter  
movement and resetting to the USPS Computerized Meter Resetting  
infrastructure. ACH Service is responsible for submitting ACH  
postage purchase requests to the USPS lockbox account at the  
bank. The CMLS Service uses cryptographic functions to decrypt  
30 the user's ACH account number. After decrypting ACH account  
information, the ACH is encrypted using the vendor's script  
library. Then, the encrypted ACH file is e-mailed to the  
Commerce Group by the SMTP server. When the Commerce Group  
receives this encrypted e-mail, the vendor's Decrypt utility  
35 application is used to decrypt the ACH e-mail. After verifying



1 the ACH information, the Commerce Group sends the ACH information  
through an encrypted device first and then uses a modem to upload  
the ACH information to a proper bank. The Certificate Authority  
issues certificates for all IBIP meters. The certificates are  
5 basically used to provide authentication for indicia produced by  
their respective meters.

The following are the steps describing the certificate  
authorization process:

- MeterGen asks the module to create a meter package,
- 10 • The module returns a package and the meter's public key,
- MeterGen creates a certificate request with the public key,  
signs the request with a USPS-issued smartcard, and submits  
the request to the USPS Certificate Authority,
- The Certificate Authority verifies the request came from  
15 the vendor then, it creates a new certificate and returns  
it to MeterGen,
- MeterGen verifies the certificate using the USPS  
Certificate Authority's certificate (e.g., to ensure it  
wasn't forged) and stores the certificate information in  
20 the package. The package is now ready to be associated  
with a customer.

The Postal Server subsystem 401 manages client and remote  
administration access to server functionality, authenticates  
clients and allows clients to establish a secure connection to  
25 the on-line postage system. The Postal Server subsystem also  
manages access to USPS specific data such as PSD information and  
a user's license information. The Postal Server subsystem  
queries the Postal portion of the Database subsystem for the  
necessary information to complete the task. The query travels  
30 through the firewall to the Postal portion of the Database  
subsystem. The Postal Server subsystem is the subsystem in the  
Public Network that has access to the Database subsystem.

In one embodiment of the present invention, Postal Server  
401 is a standalone server process that provides secure  
35 connections to both the clients and the server administration

1 utilities, providing both client authentication and connection  
management functionality to the system. Postal Server 401 also  
houses postal-specific services that require high levels of  
security, such as purchasing postage or printing indicia. Postal  
5 Server 401 is comprised of at least one server, and the number  
of servers increases when more clients need to be authenticated,  
are purchasing postage or are printing postage indicia.

The growth in the number of servers of the Postal Server  
will not impact the performance of the system since the system  
10 design allows for scalability. The Postal Server is designed in  
such a way that all of the business logic is processed in the  
servers and not in the database. By locating the transaction  
processing in the servers, increases in the number of  
transactions can be easily handled by adding additional servers.  
15 Also, since each transaction is stateless (the application does  
not remember the specific hardware device the last transaction  
utilized), multiple machines can be added to each subsystem in  
order to handle increased loads. In one embodiment, load  
balancing hardware and software techniques are used to distribute  
20 traffic among the multiple servers.

The client software includes GUI and wizards for software  
installation, user registration, printing of VBI, account  
information access, payment, and the like. An installation  
wizard helps the user to install the client software. FIG. 3 is  
25 an exemplary flow for the installation routine. In blocks 301-  
305, the user agrees to the software license agreement and  
selects a destination directory and folder for the installation  
software. In blocks 306-307, the user selects the appropriate  
ISP and connects to Internet. Links to other application  
30 software and address book are installed in blocks 308 and 309,  
respectively. Any desired plugin software is downloaded and  
installed in blocks 312 and 315. In block 311, the program files  
are installed and in block 314 the Readme is installed and the  
user computer is re-booted. The install wizard supports an Auto  
35 Update before the software is installed. Specifically, the

1 install wizard checks the server for a newer version of the  
client software before installing the software. If a newer  
version is available, then the install wizard notifies the user  
that a newer version is available on the server, and prompts the  
5 user whether or not the file is downloaded. If a newer version  
is not available, then the install wizard proceeds.

The install routine supports the installation of third party  
applications, including MS Word™, and Word Perfect™. The plugins  
for these applications are preferably included in the download  
10 file. The install wizard preferably prompts the users which of  
these, if any, they would like to install. An exemplary  
interface is shown in FIG. 5A. Address book plugins help the  
user select an appropriate plugin to support the function of an  
address book. The Install Address Book plugins are not part of  
15 the standard download file in the preferred embodiment. Rather,  
each plugin is its own file that resides on the web. The install  
wizard preferably prompts the user which, if any of the plugins  
is installed. If multiple selections are made, the user is  
prompted for a default address book. The interface for this  
20 function is shown in FIG. 5B. This list is dynamic so that the  
address book plugins can be added or subtracted without requiring  
a full client update.

The installation routine also supports OEM branding.  
Specifically, the install wizard is such that the elements  
25 described in OEM branding are stored in a resource file, so that  
the install routine itself preferably does not need to be changed  
- rather the resource file is changed. The installation routine  
or the Getting Started wizard also supports the OEM branding  
requirements. Specifically, a cookie is read and its contents  
30 are uploaded to the server.

FIGs 6A-6E are exemplary interfaces for the Internet  
connections. As shown in FIG. 6A, once the "I connect with my  
modem..." radio button is selected, the "Click here to confirm  
settings text" and "Settings..." button become available. When "I  
35 connect using AOL" is chosen, then an additional wizard screen

1 is seen by the user as shown in FIG. 6B. If "I connect using  
CompuServe" is chosen, an additional wizard screen is seen by the  
user as shown in FIG. 6B.

5 When the user first attempts to log in, and a connection  
cannot be established, an error message appears based upon which  
connection method the user has chosen. In one embodiment, if the  
user chose to connect by a local area network, the error message  
shown in FIG. 6C appears. if the user chose to connect by a dial  
up networking connection, the error message shown in FIG. 6D  
10 appears. if the user chose to connect using AOL, the error  
message shown in FIG. 6E appears.

Before a user can begin to print postage, a number of tasks  
are preferably first completed. These steps are combined into a  
wizard that launches after the customer installs the client software.  
15 The preferred goal is to provide a single, streamlined interface that  
removes any interruptions once the user completes the wizard. The  
overall flow of the user experience in getting started with the  
software is shown in FIG. 7A. In one embodiment, the Getting  
Started wizard includes five main components, a Welcome component  
20 is responsible for welcoming the user (customer), and determining  
whether or not the user should proceed through the complete  
Getting Started wizard at this time. A Sign up for Service group  
of screens leads the customer through signing up for a service  
plan. A Registration wizard group of screens handles the meter  
25 license application, and can also be accessed through the client  
application through the Options screen. A Print Setup group of  
screens take the user through printer verification and printing  
a quality assurance (QA) envelope. This component of the Getting  
Started wizard includes several independent wizards which can be  
30 accessed through the client software. The Finish portion of the  
Getting Started wizard congratulates the user and launches the  
client software. Preferably, the Getting Started wizard is  
comprised of multiple components to facilitate their reuse as  
individual wizards within the client software.

1 Typically, the volume of screens that make up the Getting  
Started wizard are significant. In order to prevent the user  
form being overwhelmed with the process, preferably the system  
constantly gives the customer a sense as to where they are in the  
5 process. To satisfy this goal, the software utilizes a "Follow  
the Yellow Brick Road" interface, which constantly updates the  
users on their progress in the wizard. The left side graphic  
area is used to indicate which of these stages that the user is  
currently in. In one embodiment, the stage is indicated using  
10 text, with the current stage being highlighted. Using text  
rather than graphics helps minimize the download size.

Each screen of the Getting Started wizard preferably has a  
Help button which links to a portion of the Help file that  
pertains to that screen. Whenever a combo box is used in this  
15 wizard, by default no item is selected, and the prompt "select  
one" preferably appears to the user. Preferably, every screen  
in the Getting Started wizard has a Cancel button on it. The  
functionality of these buttons is consistent throughout the  
wizard. The various functions that are executed when a user  
20 selects the Cancel button are described below.

The Verification Prompt is a standard prompt that verifies  
the user indeed would like to cancel the wizard. This is  
accomplished through a standard dialog box as shown in FIG. 7D.  
A Save Data button is also provided. When the user selects the  
25 Cancel button, all of the data that the user has input is saved  
locally. If the user starts the Getting Started wizard at a  
later time, all of the information that was previously entered  
is filled into the appropriate screen in the wizard. Using an  
upload Data button, the client preferably uploads the following  
30 data to a log on one of the servers; Customer email, the screen  
that the user catcalled on (resource ID), and the source (OEM  
partner, affiliate, etc.). When the Getting Started wizard first  
attempts to establish an Internet connection and experiences an  
error in connecting, error messages appear depending upon the  
35 connection method chosen by the user.

1           The Welcome portion of the Getting Started wizard provides  
two functions. First, it welcomes the user to the process and  
gives the user an idea of what is involved in the process.  
Second, it determines whether or not a user should complete the  
5       Getting started wizard at this time. There are two reasons why  
a user is kept from completing the Getting Started wizard, as  
shown in FIG. 7B. The first is if the user has previously  
completed the Getting Started wizard, shown by block 721 . The  
second is when the provider's service is over booked and there  
10      is no opening available for the user, as shown by block 723.  
When this portion of the Getting Started wizard has begun, the  
Follow the Yellow brick Road text t reads "Start". The logical  
flow of the Sign up for Service component is shown in FIG. 7B.

15           The Welcome Screen #1 720, in FIG. 7B, lists three major  
steps that the customer should complete in order to finish the  
wizard. As shown in FIG. 8A, the screen includes a smaller  
version of each screen group graphic to help the customers  
recognize each screen group as they come to it. The "Welcome"  
step of the "Follow the Yellow-brick Road" list is highlighted  
20      to show the customers that they are on the Welcome screen. A  
check box allows a user to skip the Registration and Print  
Configuration wizard. If the user selects the check box, the  
wizard closes and the "rereg" dialog box appears. The default  
state for the check box is unselected.

25           If there is no slot available for the user, the exemplary  
Welcome Screen #2 725, in FIG. 7B, appears to the user in the  
event that the user cannot be signed up the user at that time.  
A URL link button links the user to the web site on the page  
where the user can pre-register, as shown in FIG. 8B. By pre-  
30      registering, the user will later be notified when a slot is  
available.

35           At this point in the Getting Started wizard, the client  
preferably downloads information from the server for use  
throughout the remainder of the wizard. Specifically, the  
information that is downloaded includes Service Plan Information

1 such as Plan Name, Plan ID, Text file describing all of the  
plans, Contract for the plan (text file), Min purchase amount,  
Max purchase amount, Purchase Upfront (y/n), URL link to full  
description (common web link for all plans), Preferred Service  
5 Plan; and Payment Information including Payment types accepted,  
and Preferred payment type.

The Sign up for Service component of the Getting Started  
wizard extracts all of the information required to sign up the  
user for service with the provider. When this portion of the  
10 Getting Started wizard has begun, the "Follow the Yellow Brick  
Road" text is changed to "Register with Provider" (e.g.,  
Stamps.com). The logical flow of the Sign up for Service  
component is shown in FIG. 7C.

Service Screen #1 (block 730 of FIG. 7C) is shown in FIG.  
15 9A. The "Send me information..." checkbox is checked by default.  
Selection of this check box provides a database entry that  
designates that the provider and its partners have the right to  
solicit the user with marketing programs. The "Next>" button is  
not enabled until all required information is filled in.  
20 Required information for this screen includes the First Name,  
Last Name, Phone, and Email.

Service Screen #2 (block 731 of FIG. 7C ) is depicted in  
FIG. 9B. The fields in the upper portion of the screen allow the  
user to enter the physical location of the user computer. The  
25 lower portion of the screen allows the user to enter mailing  
address information in one of two ways. If the user selects the  
"Use physical address" check box, the values stored for the  
mailing address are made to be the same as those of the physical  
address, and the "Next>" button becomes enabled. Otherwise, the  
30 mailing address fields are enabled for user input. The "Next>"  
button is not enabled until all required fields are filled in.  
After the user selects "Next>", an AMS check on the address is  
performed, as shown by block 732 of FIG. 7C. The client checks  
for a PO Box in the physical address fields, as shown by block  
35 733 of FIG. 7C. In blocks 734 and 735, if a P.O. Box is

1 provided, an error message preferably indicates that a P.O. Box is not acceptable.

After service screen #2 is completed, in block 736, an AMS check on the addresses is run. Also, a check is made as to  
5 determine whether the zip code that the user provides is currently the one that is supported, as shown in block 737. If it is determined that the physical zip code is one that is supported, the user continues with service screen #3 in block 739. If the zip code is NOT one that is supported, Service  
10 Screen #2a appears to notify the user that the user is unable to sign up at this time, as depicted in block 738. An exemplary interface for Service Screen #2a is shown in FIG. 9C. A URL link button links the user to the provider's site on the page where the user can pre-register. By pre-registering, the user is  
15 notified later when a slot is available within the zip code for the physical address that is provided.

In block 739, the user enters "user name" and "password." An exemplary interface for Service Screen #3 is shown in FIG. 9D. The password preferably comprises at least 6 characters, with at  
20 least 1 alpha character and 1 numeric character. The "Next>" button is not enabled until all the information has been filled in. In block 743, Service Screen #4 captures information that either Customer Service or the client software can use to verify a customer's identity in the event that the customer loses  
25 his/her password. An exemplary interface for Service Screen #4 is shown in FIG. 9E. The key word, or "secret code" is the answer that the user gives to a question selected by the user. The default questions that the user may select from include;

- What is your mother's maiden name?
- 30 • What is your favorite pets name?
- What is your favorite vacation spot?
- What is your place of birth?

After selecting a question, the user can enter a response into an edit field. The "Next>" button is not enabled until  
35 after the information is filled in.



1 In block 744, in Service Screen #5, the users specify how  
they will use the account. Preferably, none of the radio buttons  
are selected on open. An exemplary interface for Service Screen  
#5 is shown in FIG. 9F. The company information fields and text  
5 are grayed-out and disabled until the user selects one of the  
three business radio buttons. The "Next>" button is not enabled  
until the user selects the "Personal/Individual" radio button or  
until the required business fields are populated if the user  
selects one of the business radio buttons. In addition to  
10 storing the user's response for use by the provider, the user's  
input is interpreted in order to pre-fill portions of the meter  
license. Specifically, if the user selects the first radio  
button, "Personal/Individual Use", the user is categorized as a  
"personal" user for the meter license application. If any of the  
15 other three radio buttons are selected, the user is categorized  
as a business user for the meter license. If the user selects  
one of the business categories, the data input into the business  
fields is stored both for use by the provider and for insertion  
into the meter license application.

20 Service Screen #6, in block 745, provides several types of  
information all related to the user's postage usage habits, for  
use both by the provider and the USPS. In this screen, as  
depicted in FIG. 9G, the user specifies their mail volume using  
a spinner box and the letter category is split into window and  
25 standard envelopes. In addition, a question is asked with yes  
or no radio button response options (Do you currently lease or  
rent a traditional postage meter?). The "Next>" button is  
preferably not enabled until the user has selected a value in  
each box. The mail volume box is blank by default. Each of the  
30 four percentage boxes preferably has a 0 in it. When the user  
hits the "Next>" button, verify that the percentage boxes add up  
to 100%. When storing the percentages for use in the USPS meter  
license application, the first two percentages (letters -  
standard envelopes and letters -windowed / pre printed) are added  
35 together to create the value for the USPS "letters" category.

1 The other two percentages map equally to their USPS counterparts.

Service Screen #7 (block 746) allows the user to select a service plan from the provider. The following information is preferably downloaded at the beginning of the registration wizard: Service Plan names, a URL to a page on the provider's web site that describes the service plans in detail, and text files describing each service plan. FIG. 9H depicts an exemplary interface for this screen. The drop down box preferably displays all available plans at the time. No plans are selected by default, and the prompt "Select One" appears. At this time, a text file that briefly describes all of the plans currently available is displayed in a scrollable text window below. Once the user selects a plan, the text file below is changed to display a text file that describes only that plan. If a preferred service plan is defined, this plan is the first one to appear on the drop down list (still none of the plans selected by default). A URL link takes the user to provider's web site for details on the plans. The "Next>" button is disabled until the user selects a plan.

As illustrated in block 747, Service Screen #8 displays the service contract for the service plan that the user selected on the previous screen. This contract is a text file, which is downloaded at the beginning of the registration wizard. As shown in FIG. 9I, neither of the two radio buttons are selected by default, and the "Next>" button is disabled until the user selects one of the choices. If the user selects "I Accept", the wizard will continue. If the user selects "I do NOT accept", a message box should appear as described below. This wizard screen should still remain open in the background behind this dialog box. If the user selects "I do NOT Accept on Screen #8 of FIG. 9I, a dialog box, shown in FIG. 9J, appears indicating that the user must accept the terms in order to sign up with the provider. If the user selects "Go Back", this dialog Box closes, and the user is brought back to screen #8 of the wizard. If the user selects "Cancel", the Getting Started is canceled.

1           Service Screen #9, depicted in FIG. 9K, is built  
dynamically, depending upon a user's response to the payment type  
prompt. The payment type field is empty by default. The values  
5           available for this field are preferably downloaded when the  
registration wizard begins. The "Next>" button is disabled  
before AND after a value is selected for the payment type. The  
"Next>" button remains disabled until the screen dynamically  
builds, and all of the fields are completed by the user. If a  
10          preferred payment method is defined, this method of payment is  
the first one to appear on the drop down list (still none of the  
payment method types are selected by default).

15          If a credit card is selected as the method of payment in  
decision block 750, the fields shown in the screen of FIG. 9L  
appear. The cardholder name and card number are both edit boxes.  
The expiration date is entered using two combo boxes. The prompt  
for the billing address allows the user to either enter an  
address manually, or copy the address given on service screen #2  
as a mailing address. If the user selects the "Use Mailing  
Address" check box, the mailing address information is copied  
20          into the billing address fields, and these fields are disabled.  
All fields preferably should be filled in before the user can  
proceed. After the user selects "Next>", an AMS check on the  
address is performed, as shown in block 753.

25          If ACH method of payment is selected in decision block 750,  
the fields shown in screen of FIG. 9M appear. All fields  
preferably should be filled in before the user can proceed.  
Service Screen #10, in block 756 or 757, allows the user to  
purchase postage. The order is accepted at this time, but is not  
processed until the meter license has gone through. At the  
30          beginning of the registration wizard, the maximum and minimum  
purchase amounts associated with a service plan are downloaded.  
As shown in FIG. 9N, the user can enter a purchase in one of two  
ways: by selecting a pre-defined amount or by entering an amount  
into an edit box. In one embodiment, the pre-defined values of  
35          the radio buttons are \$10, \$25, \$50, \$100, and \$200. If any of

1 these values are lower than the minimum purchase amount  
associated with the plan that the user has selected, then the  
associated radio button(s) is disabled. Similarly, if any of the  
pre-defined values are higher than the maximum purchase amount  
5 allowed by the plan that the user selected, then the associated  
radio button(s) is disabled. The Purchase Postage control allows  
the user to enter in both dollars and cents values. Preferably,  
none of the radio buttons are selected by default. If the  
selected plan offers free postage without requiring a purchase,  
10 the "Next>" button is always available. Otherwise, the "Next>"  
button is disabled until a purchase amount is selected. If the  
service plan selected by the user does not require the immediate  
purchase of postage, an additional radio button should appear  
which allows the user to select a value of "none."

15 As described above, the Registration Wizard is capable of  
gathering all of the information that is required by the USPS for  
a Meter License Application. The information that is extracted  
in this wizard is used to generate a USPS 3601A form. FIG. 10A  
is an exemplary flow of the Registration wizard component of the  
20 Getting Started wizard. When this portion of the Getting Started  
wizard has begun, the Follow the Yellow Brick Road text is  
changed to "Apply for a Postage Meter". In block 1010, License  
Screen #1 serves the purpose of letting the user know that he/she  
is entering the portion of the wizard where the meter license is  
25 filled out. The follow the Yellow Brick Road text will change  
to meter License application., as shown in FIG. 10B.

In block 1011, the user determines whether they are a  
business or and end user. In License Screen #2 (block 1012), the  
user specifies which identification number they wish to use.  
30 None of the radio buttons are selected on open, as shown in FIG.  
10C. The "Next." button as well as the Tax ID#, EIN, and SSN  
fields are grayed-out and disabled. When the user selects a  
radio button, it enables the corresponding field. When the user  
begins to enter data in a field, it enables the "Next>" button.  
35 License Screen #3 (block 1013) is for the user to answer some

1 business related questions, as depicted in FIG. 10D. The "Next>" button is not enabled until the questions are answered.

License Screen #3a (block 101a) only appears to business users. As illustrated in FIG. 10E, neither of the radio buttons  
5 are selected by default, and the edit fields and the Next button are preferably unavailable when the user first sees this screen. If the user selects "Yes", the Next button becomes available. If the user selects "No", the edit fields become available. Once all of the required fields have been completed, the Next button  
10 becomes available. License Screen #4 (block 1015) of FIG. 10F includes a field in which the user enters a Social Security #. The "Next>" button is not enabled until the field is filled in with a nine digit number. In License Screen #5 (block 1016) of FIG. 10G, neither radio button is selected by default. The  
15 "Next>" button is initially disabled. If the user selects the "No" radio button, the "Next>" button becomes available. If the user selects the "Yes" radio button, the "Next>" button is not enabled until at least one set of license and finance numbers have been entered.

FIG. 10H is an exemplary interface for License Screen #6 of  
20 block 1017. In this screen, neither radio button is enabled by default. The "Next>" button is enabled if the user selects the "No" radio button or once the revoked reason field is populated if the user selects the "Yes" button. FIG. 10I is an exemplary  
25 interface for License Screen #7 of block 1018. In this screen, a check box is used to verify the accuracy of the information. Once the check box is selected, the "Next>" button is enabled and the information is submitted to the server. If the user does not select the checkbox, the only options are to go back and make  
30 changes or cancel the Getting Started wizard. In addition to the information that was gathered during the wizard, the following information need also be submitted; OEM #, Tracking #, 3<sup>rd</sup> Party Applications installed, and the address books that were installed.

35 An exemplary interface for License Screen #8 (block 1019)

1 is illustrated in FIG. 10J. This screen serves the purpose of  
providing a status to the user while all of the information that  
has been provided in the wizard, including payment information,  
is uploaded. In addition to uploading the information that has  
5 been extracted as part of the Getting Started wizard, the OEM  
tracking ID is uploaded as well. For OEM partners, the ID is in  
a registry key. Initially, the "Next>" button on this screen is  
disabled, and only the text in the upper portion of the screen  
appears. Once the communication with the server is completed,  
10 the text "Select Next to continue" appears, and the "Next>"  
button becomes available.

In blocks 1021 and 1023, the information entered by the user  
is checked for any potential errors and the errors are reported  
to the user. Once the information has been submitted, the server  
15 is able to communicate if any of three errors occur with the  
information that the user has provided. These errors include a  
non unique user name, bad ACH information, and rejected credit  
card payment. If any of these errors occur, a wizard screen  
appears that dynamically displays the error that is returned from  
20 the server. When the user selects "Next>", the appropriate  
wizard screen shown in FIG. 10K appears and allows the user to  
resubmit information. Preferably, the User cannot continue until  
the error is corrected. After correcting the error, the wizard  
returns to the submit screen. If an additional error is found,  
25 this routine is repeated.

In block 1028, if the user submits a non unique user name,  
the dialog box of FIG. 10L appears. This dialog box preferably  
has the same functionality of the user name wizard screen, except  
that the lower portion (the password portion) is not displayed,  
30 the suggest button appears, and the text changes as shown. If  
the user selects the Suggest button, the client populates the  
user name field with the suggestion that is sent down from the  
server. In block 1026, if the ACH check indicates that there is  
a problem with the ACH information, the dialog box depicted in  
35 FIG. 10M appears. This dialog is preferably the same as the

1 select payment screen of the wizard, with one exception; the  
Payment Type is pre-filled with the selection "ACH" and as a  
result the ACH fields will be available. These fields are  
preferably pre-populated.

5 In block 1027, if a reject on a credit card process is  
received, the dialog box shown in FIG. 10N appears. This dialog  
is preferably the same as the select payment screen of the  
wizard, however, the Payment Type is pre-filled with the original  
credit card selection, with all of the associated fields pre-  
10 filled. In block 1024, the License Screen # 9, illustrated in  
FIG. 100, serves the purpose of letting the user know that the  
meter license portion has been completed, and that the Print  
Configuration will be next. In addition, this screen dynamically  
lets the user know what the expected wait time is in the second  
15 paragraph based upon a "license approval delay variable" that is  
downloaded from the server. If the license approval delay  
variable is "0" (i.e. instant approval) then the second  
paragraph is not displayed. If the license approval delay has  
a value other than 0, the second paragraph is displayed and  
20 dynamically inputs the delay amount as shown below. The variable  
number that is provided by the server is in hours. Once this  
verification is completed the user may proceed to Print Setup  
wizard, as shown in block 1025.

25 The Print Setup portion of the Getting Started wizard  
includes several wizard components, which can be broken out and  
used individually in the client software. These wizards are  
brought together into the Print Setup portion of the Getting  
Started wizard to provide all of the printing oriented checks and  
tasks that a user should complete before starting with the  
30 software. These include: Print Verification, Print QA envelope,  
and Determine top, center, or bottom envelope feed (if  
necessary). When this portion of the Getting Started wizard has  
begun, the Follow the Yellow Brick Road text is changed to "Test  
Printer". An exemplary flow of the Print Setup component is  
35 shown in FIG. 11A.

1        In block 1101, Print Setup Screen #1 is used to select  
default printer. This screen, shown in FIG. 11C, prepares the  
user for testing on the user's printer. A drop down box displays  
5 all of the printers that are installed on the user's system, and  
allows them to select the default printer to be used. When a  
user selects a printer, this printer is considered as being  
selected for the print jobs that are performed during this  
section of the wizard. In addition, this default selection is  
10 incorporated into the standard Print Prepare dialog box, and is  
therefore the printer chosen until the user selects otherwise.  
None of the printers is selected by default, and the "Next>"  
button preferably is not available until the user selects a  
printer.

15        In block 1102, Print Setup Screen #2, shown in FIG. 11D,  
allows the user to select two bits of information that are  
required before the print testing functions can be undertaken.  
The first is a drop down box, which allows users to select a  
envelope size to be used throughout the tests. These tests do  
not allow a user to use labels, so only the envelope options  
20 appear. The second bit of information is whether or not the user  
wants to omit the return address or not. The user prompt is  
preferably different here than in the Print Options dialog. In  
this case, if the user selects, "yes", the return address is  
printed. If the user selects "no", the return address should not  
25 be printed. The answers to both of these items are stored and  
used for all testing undertaken within this portion of the  
wizard. The information that is gathered here is also used to  
populate the corresponding fields within the Print Postage and  
Print Options dialog boxes when the user first launched these  
30 screens. Neither the envelope sizes, nor the radio buttons  
contain values by default. Furthermore, the "Next>" button is  
preferably not available until the user selects an envelope size  
and answers the yes/no question.

35        In block 1103, it is determined whether the default printer  
information is in the printer database. If the printer



1 information is not in the database, a printer troubleshooting  
routine is performed, as shown in block 1104. If the printer  
information is in the database, printer Screen #3, depicted in  
FIG. 11E, appears. This screen serves the function of notifying  
5 the user that postage is about to be printed, and making the user  
aware that an envelope must be loaded into the feeder. A graphic  
of an envelope being placed into a printer is preferably used to  
help re-enforce the action to the user. This screen is used  
multiple times during the Printer Setup portion of the Getting  
10 Started wizard. See the flow diagram for further details. The  
"Next>" button is available immediately. Once the "Next>" button  
has been selected, a sample QA envelope is printed, as shown in  
block 1106. In block 1107, the sample is compared with a sample  
shown in Printer Screen #4 of FIG. 11F. In this screen, neither  
15 of the radio buttons is selected by default, and the "Next>"  
button is not available until the user selects one. In block  
1108, if the samples do not compare, printer troubleshoot 2 is  
activated to perform the troubleshooting task, as illustrated in  
block 1109. If the samples compare correctly, the printer  
20 information is uploaded and the money in the meter is checked,  
as shown in blocks 1110 and 1111 respectively. In one  
embodiment, if the user does not supply a QA envelope, the client  
software prevents the user from printing the VBI.

Similar to Printer Screen #3, Printer Screen #4 serves the  
25 function of educating the user about QA envelopes, notifying the  
user that postage is about to be printed, and making the user  
aware that an envelope needs to be loaded into the feeder. A  
graphic of an envelope being placed into a printer is used to  
help re-enforce the action to the user. This section of the  
30 wizard, illustrated in FIG. 11G, only appears if there is money  
in the user's meter (this requires instant meter approval), as  
shown in blocks 1111 and 1112. The "Next>" button is available  
immediately. Once the "Next>" button has been selected, a QA  
envelope is printed in block 1114.

35 Next, in block 1115, Printer Screen #6, shown in FIG. 11H,

1 appears. This screen's primary function is to educate the user  
that the QA envelope should be sent in immediately, or the user's  
meter license may be revoked. A graphic of an envelope being  
placed into a mail box is used to help re-enforce the action to  
5 the user. The "Next>" button is available immediately.

In the event that the user's printer is not in the printer  
database, the Print Configuration wizard is initiated. An  
exemplary flow for the Print Configuration wizard is shown in  
FIG. 11B. The first screen in this wizard is Printer Setup  
10 screen #3 (see FIG. 11E), which prompts the user to place an  
envelope in the printer feed tray. Once the user selects  
"Next>", a pattern including a circle, a square, and a triangle  
is printed. Only one of these shapes completely prints onto the  
envelope fed through the printer, so based upon which shape  
15 appears to the user, the system can ascertain if the printer  
feeds envelopes from the top, center, or bottom. The Printer  
Screen #7, shown in FIG. 11I, provides a means by which users can  
tell the client which of the shapes appear on the envelope. This  
is done through a series of radio buttons. None of the radio  
20 buttons is selected by default, and the "Next>" button is not  
available until the user selects one of the options. If the user  
selects either the circle, square, or triangle, the appropriate  
offset is made, the information is sent to the server, and the  
user continues with screen #8 as shown in block 1126 and 1127.

25 In block 1123, if the user selects "none of the above match  
what I see" on screen # 7, Printer Screen #8, shown in FIG. 11J,  
appears to ask the user which option the user would like to  
pursue at this time. Three radio buttons provide the options.  
If the user selects the Try printing another sample option,  
30 another shape design is sent to the printer, so that the  
comparison process can be undertaken again. Selecting the Try  
printing another sample to a different printer option links the  
user back to screen #1 of the Print Setup, allowing the user to  
select another printer and start the process again. Selecting  
35 the Neither of these solutions work option indicates that the

1 system cannot determine a feed offset and therefore cannot print  
envelopes using the user's printer. When "Next>" is selected,  
the message on screen #9 conveys this to the user. None of the  
radio buttons is selected by default, and the "Next>" button is  
5 not available until the user selects one of the options.

If the user selects "neither of these solutions work" on  
screen # 8, print envelope is disabled and Printer Screen #9,  
shown in FIG. 11K, appears to ask the user to let the user know  
that he/she is not able to print postage onto envelopes, only  
10 onto labels (see blocks 1128 and 1129). The "Next>" button is  
available immediately. Once selected, the client preferably  
disables printing to envelopes. A Finish portion of the Getting  
Started congratulates the user for completing the wizard, and  
launches the client. When this portion of the Getting Started  
15 wizard has begun, the Follow the Yellow Brick Road text is  
changed to "Finish". An exemplary interface for Finish screen  
#1 is illustrated in FIG. 11L. The "Finish" button is preferably  
available immediately. Once the "Finish" button has been  
selected, the user is ready to launch the client software.

20 A re-registration process allows users to re-register across  
systems. An exemplary flow for the re-registration process is  
shown in FIG. 12A. To begin the re-registration process, the  
user logs in as normal via the login dialog box shown in FIG.  
12B. The client sends the User Name, Password, and system  
25 identification information to the server. After checking for the  
validity of the user name and password, the server checks if the  
user is currently registered on the current system, or on another  
system. In block 1203, if the user is registered on the current  
system, login continues as normal, as shown in block 1204. If  
30 the user is currently registered on another system, in block  
1206, another check is made to determine if the user is currently  
logged into the provider's service. In block 1207, if the user  
is already logged in, the message in FIG. 12C appears. In block  
1209, when the user selects "OK" the login attempt is aborted.

35 In block 1208, if the user is currently registered on

1 another system, and is not currently logged in, then the dialog  
box of FIG. 12D appears. This dialog box prompts the user as to  
whether the user wants to re-register is/her account on the  
current machine. In block 1210, if the user selects "Yes", the  
5 account is re-registered (block 1211). If the user selects "No",  
the login attempt is aborted (block 1212).

The client print engine prints a Facing Identification Mark  
(FIM) in accordance with USPS specifications. Preferably, the  
FIM is printed within 1/8" from the top of the envelope, and no  
10 more than 2 1/8" from the right hand edge, as shown in FIG. 13A.  
A print engine supports as broad of a range of printers as  
possible, utilizing whatever specialized techniques that are  
deemed appropriate for proper printing of the postage indicia  
(i.e. rotation and virtualization). Before rotation is applied  
15 to an individual client, a verification is performed to verify  
that the user's printer and print driver are known to work with  
this technique. This is accomplished using a check against a  
database of printers and printer drivers that are known to work  
with rotation within the client software. This database is  
20 preferably created through hands on testing. Some examples of  
print dialog boxes for the Print Postage dialog box, Print Prompt  
dialog box, and Printing Options dialog box are shown in FIGs.  
13B-13I.

A Print Postage dialog box is the main interface from which  
25 a user defines the postage to be printed. An exemplary interface  
for this dialog box is illustrated in FIG. 13J. Return Address  
items are grouped within their own frame. The Return Address box  
is editable, allowing users to customize the return address by  
simply typing into the box. Delivery Address items are grouped  
30 within their own frame. The Delivery Address box is editable,  
allowing users to insert a delivery address by simply typing into  
the box. If a user adds an address which is not in the address  
book, the user is prompted whether or not the address is added.  
In the event that only a single recipient is chosen, the address  
35 is displayed in the same format that it is in the return address

1 window. If multiple recipients are selected, the view is that  
 of a list box displaying the names of all of the recipients that  
 have been chosen. If multiple recipients are selected and  
 different recipients require mailing to different zones, then the  
 5 cost of postage is displayed next to that recipient.

"Do not print the Return Address" is unchecked by default.  
 Mail Type toggle buttons enable the user to select whether the  
 mail to be sent is a letter, flat, box or oversized box. This  
 information is used to determine what labels and/or envelopes are  
 10 available to the user, as well as what the postage rate will be.  
 The letter toggle is selected by default. Mail type description  
 field provides a brief description of the mail type that is  
 currently selected with the Mail Type toggle buttons. Print On  
 list box allows user to select from all Envelopes and Labels.  
 15 The items displayed in this list box are determined by the type  
 of mail that was selected in the previous list box. If a letter  
 is selected, only envelopes and labels approved by the USPS are  
 available. If a flat or box is selected, only labels approved  
 by the USPS are available. No values are selected by default.

20 The Enter Weight fields allow users to type in values or  
 select them using spinner controls. If the user has set up a  
 digital scale, clicking on the scale button automatically pulls  
 the value from the scale and display the value in these fields.  
 After the initial use, the fields remember the last value. The  
 25 "Select a Service" control is a list box, which shows the various  
 services that are available and also displays the cost of each  
 type of service for the mail piece that has been defined. The  
 prices update as the user inputs information into the Enter  
 Weight fields. If the user is typing a value, the display  
 30 immediately updates as the user types. If zone based postage is  
 used, and if multiple users are selected, the range of costs is  
 displayed. Once a user has selected a mail service, a graphic  
 of a check mark should appear immediately to the left of the item  
 as shown. None of the items are selected by default. Available  
 35 Postage display displays the available postage amount. Total

1 Mailing Cost displays the cost of the total mailing when multiple recipients are selected.

Preview Window is dynamic, depending upon the selection from the "Print Onto" list Box. Print button decides whether to print  
5 a sample or real postage. This single print button advances the user to the Print Prompt screen. Options button launches the appropriate options dialog box, depending upon the selection type into the "Print Onto" list Box. If an envelope is selected, the Envelope Options dialog box will be launched. If a label is  
10 selected, the Label Options dialog box appears. In the event that multiple recipients and/or zone based postage rates are selected, portions of the Print Postage dialog changes slightly in their functionality, as shown in FIG. 13K.

In the exemplary screen of FIG. 13K, when multiple  
15 recipients are selected, they are displayed as a list with only the recipient name showing. When multiple recipients are selected which span multiple zones, the price of the mail piece going to an individual recipient is displayed next to the recipient's name. This display only appears after a weight value  
20 that warrants zone based postage has been entered. The Select a Service list box shows a range of prices for the mailings. The Cost of Mailing display appears when multiple recipients are selected, and provides the user with a total cost for the mailing.

25 After the user has selected "Print" from the Print Postage dialog box, the Print Prompt dialog box of FIG. 13L appears. The Print Prompt dialog box takes on several functions, including selection of the printer, printer paper feed, and determination of whether a sample or real piece of postage is being printed.  
30 The printer list boxes provide a selection of available printers. Standard Windows displays (optional) display the selected printer. Existing printer feed information displays relevant information about the selected printer. Print Internet Postage and Print Sample buttons print postage, and the Configure button  
35 launches the Print Configuration wizard.

Envelope Options dialog box, depicted in FIG. 13M, is launched from the Print Postage dialog box when two conditions are met: 1) the user selects the "Options" button, and 2) an envelope is selected in the "Print Onto" drop down box. Do not print a FIM check box has a small graphic icon to let the user know what the FIM barcode is. Postdate Mail piece control has a text description as shown. If the user selects the check box, the edit box becomes available to allow editing. Indicum correction items allow the user to print two forms of special Indicia: postage correction and date correction. Return Address Graphic control allows the user to select a graphic to be printed with the return address. Return Address adjustments and Delivery Address adjustments controls provide margin adjustments for the return address and delivery address, respectively. Indicum graphics that can be displayed within the Indicum are preferably controlled by the provider. To accomplish this, the system provides graphics for the Indicum in a digitally signed format, embedded within a DLL. At a minimum, this graphic is used for OEM partners. The system also provides clip art for the Indicum graphics. The system therefore makes sure that this DLL can be downloaded on its own, so that a clip art library can be updated without forcing a complete download of the client. If the DLL is not present, this control is unavailable.

FIG. 13N is an exemplary interface for a Label Options dialog box. This dialog box is launched from the Print Postage dialog box when the user selects the "Options" button, and a label is selected in the "Print Onto" drop down box. Do not print a FIM check box control has a small graphic icon to let the user know what a FIM barcode is. Postdate Mail piece control has a text description as shown. If the user selects the check box, the edit box becomes available. Indicum correction items allow the user to print two forms of special Indicia: postage correction and date correction. Indicum graphics that can be displayed within the Indicum are preferably controlled by the provider. To accomplish this, the system provides graphics for

1 the Indicium in a digitally signed format, embedded within a DLL.  
At a minimum, this graphic is used for OEM partners. The system  
also provides clip art for the Indicium graphics. The system  
therefore makes sure that this DLL can be downloaded on its own,  
5 so that a clip art library can be updated without forcing a  
complete download of the client. If the DLL is not present, this  
control is unavailable. Delivery Address font control allows the  
user to change the font of the Delivery Address by launching a  
secondary dialog box.

10 A Print Configuration wizard helps the user undergo three  
major processes: determining top, center, or bottom offset (if  
needed), providing print verification, and Printing a QA  
envelope. The print engine preferably incorporates the  
provider's logo into the Indicium. Rather than integrating a  
15 single static logo graphic, the print engine accommodates a  
scalable graphic. The reasoning behind this is as follows. In  
order to conform to the FIM placement standards which requires  
that the FIM consistently be printed 2" +/- 1/8" from the right  
hand edge of the envelope, the space available between the FIM  
20 and the human readable portion of the Indicium will change  
depending upon the right hand margin of the printer used, as  
shown in FIG. 14A. The logo is scaled to the maximum size  
available given the space constraints which arise from the  
individual printer margin. This approach ensures that the  
25 maximum log size is always used, as shown in FIG. 14B.

A means by which users can customize their mail piece with  
a graphic file of their choosing is provided by the system. The  
system provides users with the ability to incorporate a graphic  
into the return address space. Specifically, the client software  
30 allows the user to incorporate a standard graphic into the area  
to the left of the return address, as shown in FIG. 15A. The  
default state is that no logo is selected for this position. In  
the event that no logo is selected, the layout is as shown in  
FIG. 15B. The controls for the determination of the image to  
35 occupy this space are found in the Print Postage Options



1 (Envelope Printing Options) dialog box of FIG. 15C. When Include  
Graphic check box is selected, it indicates that the print engine  
should print a graphic file. When this check box is not  
5 selected, the print engine should not print a graphic. The  
default for this check box is unselected. Selecting the Browse  
button opens a standard file browse dialog box, which allows the  
user to browse for and select a file. Preview Window provides  
a preview of the selected graphic once it has been selected.

10 A personal address book may be used by the user to print  
addresses on the mail pieces. The client's native address book  
is functional even when the user is offline. Specifically, the  
user is able to add addresses, edit addresses, import addresses,  
and remove addresses without requiring the user to login on-line.  
15 In order to ensure that every address that is entered, modified,  
or imported undergoes an AMS check, addresses undergo an AMS  
check at the time the postage is printed to an address (see  
Printing description). In addition to the native address book,  
the system provides support for a variety of external address  
20 books. Examples of some of the address books supported include  
Microsoft Outlook™, Schedule +™, Symantec ACT!™, Lotus  
Organizer™, Lotus Notes™, GoldMine™, Microsoft Windows Address  
book, and the like.

25 The client's support for the external address books is such  
that the user can read data from any of these address books from  
within the standard client address book interface. The data is  
able to be read in real time. In addition, the user is able to  
make changes to addresses and write these changes back to the  
external address book. In order to allow the user to select  
30 which address book to use (either the native or any of the third  
party address books), several controls are added to the client  
Address Book interface, as shown in FIG. 16A. Select an Address  
Book combo box contains a list of all address books that are  
supported by the client, and have been installed by the user.  
The default is set to the system's address book. Preferably,  
35 this drop down box remembers the last selection. Select a

1 database or file combo box control displays a list, which  
includes the default file or database (depending upon the  
provider), and any other file that the user has previously opened  
5 additional files or databases for the address book selected by  
launching the appropriate "open" dialog for the provider.  
Preferably, when possible, the only controls on the provider's  
Address Book open screen is the bare minimum that are required  
to open a file. The user can modify addresses using the  
10 "properties" button. Based upon which address book is selected,  
a different set of fields is displayed within the edit properties  
dialog box. The fields map to the format of the address book  
that is selected. The user has the ability thereafter to switch  
address books on-the-fly, by selecting the appropriate address  
15 book from the selection box as shown in FIG. 16A.

In one embodiment, the code that provides support for each  
address book is created as a plugin, allowing users to only  
download the address books that they want support for. The  
install routine provides a means by which users can select which  
20 address books are downloaded, and automate the installation of  
the plugin applications. Support is provided for importing other  
address data. For example, the system provides import filters  
for the following: Daytimers, the Learning Channel products,  
MYOB, and the like. Also, address books support standard group  
25 capabilities. The system is capable of providing support for  
foreign addresses, and is able to pass AMS matching checks.  
Furthermore, the system provides the capability to print  
addresses that have been returned by AMS in a format that  
includes both upper and lower cased alpha characters. In other  
30 words, the address that is printed should preferably have the  
same formatting of upper and lower case characters as the user  
originally entered. When multiple recipients are selected from  
the address book, the dialog box shown in FIG. 16B appears to  
educate the user about multiple recipient selection. Selecting  
35 Ok closes the dialog box and returns the user to the Print

1 Postage dialog box. If the user selects the check box (which is  
unselected by default), this dialog box will not appear again in  
the future.

5 The address book within the client provides a utility to  
import text files that have been exported from other address  
books. Typically, when a user imports a text file, the user need  
to "map" the fields from the original file into the fields of the  
destination file. This is very cumbersome for the user, and  
often prevents users from successfully importing files. To avoid  
10 forcing the user to map fields, the system provides import  
"filters," that are unique filters written for each address book.  
Since each filter is unique to an individual source file, the  
filter knows the data field structure of the source file (and it  
knows the data structure of the destination system address book).  
15 With this knowledge, the import filter is able to import files  
from other address books without requiring any data structure  
input from the customer. To meet the brandability needs, the  
system accommodates an easy addition of import filters.

20 The system also provides a flexible messaging system, which  
includes a communication channel between the provider and its  
users through the client software. Messages may be created by  
various departments within the provider's organization and are  
pushed by the server to one of several types of messaging dialog  
boxes. Some examples of messaging dialog boxes are described in  
25 detail below.

FIG. 17A is an exemplary message dialog box. The graphic  
indicates the message category, the Text box displays characters  
of text in a non-editable text box, the URL Link button is  
dynamic and is available only when a URL address is included with  
30 the messages, and the OK button closes the dialog box. If  
applicable, selection of the OK button also executes a function  
(see specific cases, below). For client / server communications,  
the server is able to assign a message to any of the following:  
Individual users, all users, and a group of users (defined by any  
35 attribute that system stores). The client checks the server for

1 messages awaiting the individual user at login. If a message is  
found for the individual user, the server sends the following  
information down to the client: Message type, Message Text, and  
URL link. In addition, if the message type is "payment" the  
5 following information are also sent: date of payment rejection,  
type of payment for payment rejection, account for payment  
rejection, and amount of payment rejection.

In the event that a message is awaiting a user at the time  
of login, the client displays one of several types of messaging  
10 dialog boxes. The specifics of the dialog box that is displayed  
is dependent upon the "Message Type" that awaits the user.  
Generally speaking, the types of messages available fall into one  
of two categories: generic or template. The generic message type  
includes marketing messages, customer support messages, etc,  
15 where the intent of the messaging is simply to communicate with  
the user and perhaps provide a URL link. The template message  
types include payment resubmission, email resubmission, and plan  
change notifications, where in addition to sending a message to  
the user the messaging dialog box allows the user to take action  
20 on the message. In one embodiment, template dialogs are hard  
coded into the client system to accommodate the special actions  
that are taken. Marketing Messages allow the provider to  
communicate with the user base. For example, the Marketing  
Message dialog box allows the provider to promote an item that  
25 is sold on their web site, and provide a URL link to that item.  
An example of the specific components of a marketing message are  
shown in FIG. 17B. In the Icon graphic, a generic Marketing  
Message icon appears. The text for Text box is customizable at  
the server. If the provider wants to associate a URL with the  
30 message, a URL link button named "More Info..." appears. The OK  
button closes the dialog box.

A Customer Service Message is preferably the same in  
functionality as the Marketing Message dialog box, except that  
the graphic icon is different. The different graphic  
35 communicates to the user that this message is a different type

1 of message than a Marketing Message. The Customer Service dialog  
is designed to communicate customer support issues, as shown in  
FIG. 17C. A Credit Card Promotion message type, as shown in FIG.  
17D allows the provider to broadcast credit card promotions to  
5 the users. The graphic icon communicates the message type to the  
user. In one embodiment, this graphic includes the MasterCard  
logo. The text on the URL link button reads "Apply Now". FIG.  
17E is an exemplary dialog box for Payment Resubmission Message.  
The Payment Resubmission Message is a template type of message.  
10 The purpose of this template message box is to convey to a user  
that a payment has been rejected, and facilitate a payment  
resubmission by the user. As illustrated in FIG. 17E, a Payment  
Message icon appears in the icon graphic. The Text box is  
dynamic, explaining the details of the failed transaction. The  
15 end of the message typically reads "Select OK to resubmit your  
payment," and the OK button closes the dialog box and launches  
the purchase postage screen.

Email Resubmission Message is a template type message, whose  
purpose is to notify a user when the system does not have a valid  
20 email address for him/her, and enable the user to provide this  
information. Exemplary elements of this type of message dialog  
are shown in FIG. 17F. An Email Message icon appears in the icon  
graphic. The text for the Text box is static and the contents  
of the text box are shown in the graphic. An Email edit box  
25 allows the user to enter an email address, and the OK button  
closes the dialog box, and sends the user's email address to the  
server.

A Change in Service Plans Message (also a template type  
message), indicates when new plans are available to a user, or  
30 if the user's current plan is going to be grandfathered. This  
message dialog basically indicates the change to the user and  
links the user to the change plans dialog and to more information  
about change plans, if desired. Exemplary elements of this  
dialog are shown in FIG. 17G. As shown, a Service Plans Message  
35 icon appears in the icon graphic. The text for the Text box is

1 dynamic, and displays the plan changes. This text ends with the  
text string "Select 'OK' to view the new plan, or cancel to  
continue. The OK button closes the dialog box, and opens the  
Change Service Plans dialog box. The Cancel button closes the  
5 dialog box without opening the Change Service Plans dialog box.  
A Message Log is created to list a history of the messages that  
a user has received. This log is accessible from the "Accounts"  
screen, and have the standard layout and capabilities of the  
other logs within the client.

10 The client software checks for available updates at the  
beginning of the installation routine, before any files have been  
installed, and at each login. At each of these times, the client  
checks for an available update. If an update is available, a  
dialog box appears. This dialog box provides a message which  
15 communicates the details of the available update, and provides  
a URL link to a website where the update file can be downloaded.  
The update file may be classified as either mandatory or  
optional. If the update is mandatory, the update is installed  
by the user. If the update is optional, the user can choose  
20 whether or not to install the file. There are no restrictions  
regarding how many update messages can be sent out, and the  
update message is not tied into the standard messaging described  
earlier in this document. The auto update feature is able to  
copy individual files so that a version can be updated without  
25 requiring a complete update.

In one embodiment, the system includes OEM branding  
capabilities. The system allows for the customization of the  
installation script in several ways, including the option of  
running a silent install, defining a default installation  
30 directory, and defining a default installation group. The  
default behavior of the installation routine is to run as an  
application that is visible to the user, and requires user input  
on multiple screens during the installation process. The system  
provides the option of a "silent install", which installs the  
35 program files to the user's system without being visible, and

1 without requiring user intervention. The installer is told where  
to install the product's files. While the user may choose to  
install the product in any directory location they want, the  
installer offers them a choice consistent with the product  
5 identity. Every product is placed in a sub-directory within the  
master directory. The OEM partner has the ability to provide a  
name for both the master directory and sub-directory into which  
the product is installed. Program group, or "folder", is the  
location in which the installer displays the product if the user  
10 does not manually choose a different one. The system allows the  
OEM partner to customize the Default Program Group name. The OEM  
partner does not have the ability, however, to change the name  
or associated icons of the items within the group.

15 The system provides the ability to co-brand the software by  
providing prominent partner logo placement on the main screen  
within the software. In one embodiment, the logo placement is  
in the upper left hand corner of the main screen, below the  
provider's logo. An example of the layout of the provider's logo  
and the partner logo are shown in FIG. 18. The client software  
20 provides URL links which can be defined by the OEM partner.  
Specifically, the client software allows URL links to be  
embedded within two areas of the main client screen, the  
provider's logo in the upper left hand corner of the main screen,  
and the partner logo on the main screen. The system also  
25 provides a space within the postal indicium that is designated  
to display a logo or slogan of the OEM partner.

The system incorporates client server technology which  
enables the provider to provide OEM partners with data that  
tracks the postage usage of customers who are using that OEM's  
30 version of the client software. The client software embeds a  
unique OEM identifier within each OEM version of the client  
software. Once a user has registered with the provider, that  
user is thereafter associated with the OEM that is identified  
within their client software. This association, as well as all  
35 tracking activities, are transparent to the user and require no

1 additional intervention by the user. In the event that a user  
gets the client software through an Affiliate Partner's web site,  
the account number that a user is assigned will embed in it  
information that identifies the source Affiliate Partner.  
5 Therefore, this account number is uploaded to the Postal Server,  
which occurs at the end of the Registration wizard. In the case  
of an affiliate partnership, the tracking number is extracted  
from a cookie that has been downloaded onto the users computer.  
The details concerning formatting and requirements of the cookies  
10 are covered in a separate document.

A change of Address wizard is designed to help a user  
through the process of changing either a physical or mailing  
address, and the meter license ramifications that may result.  
An exemplary process flow of the Change of Address wizard is  
15 shown in FIG. 19A. In block 1901, the Change of Address Screen  
#1 serves the purpose of welcoming the user to the wizard using  
the text as shown in FIG. 19B. Selecting "Next>" advances the  
user to the next screen of the wizard. In block 1902, the Change  
of Address Screen #2 allows the user to enter a new mailing  
20 address and/or physical address. As shown in FIG. 19C, the  
controls used are the same as are used in the Addresses screen  
of the Getting Started wizard. The only difference is in the  
introductory text. The client checks for a PO Box in the  
physical address fields. If a PO Box is provided, the error  
25 message indicates that a PO Box is not acceptable. These fields  
are preferably pre populated by default. In blocks 1903 and  
1904, addresses are checked and in block 1905, the Change of  
Address Screen #23, shown in FIG. 19D, appears. This screen  
preferably serves the same purpose as the Submit screen of the  
30 Registration Wizard, and preferably uses the same controls. One  
difference is that in this case, the only information that is  
populated is the address information that is provided in screen  
#2.

Change of Address Screen #4, shown in FIG. 19E appears when  
35 a change in the meter license is not required (i.e. if the



1 physical address hasn't changed or if the physical address hasn't  
resulted in a changed LPO), as shown in blocks 1906 and 1907.  
In this event, in block 1910, the server submits a 3601C form,  
and this screen appears to let the user know that the address has  
5 been successfully changed. The Change of Address Screen #5  
(shown in FIG. 19F) educates the user about the process that  
needs to be undertaken in order to withdraw and reapply for a  
meter license. Selecting "Next>" prompts the user with a warning  
dialog box, as shown in FIG. 19G. If the user responses "Yes"  
10 to the warning, the meter is withdrawn, and "moved" is inserted  
into the reason for withdrawal on the 3601 C form (see block  
1913), and the mailing address that is provided at the beginning  
of this wizard is used for the mailing of the refund check. This  
withdrawal should not result in a "slot" becoming available for  
15 a brand new user, as this user will re-register momentarily and  
take the "slot" again. If the user enters "no", the wizard is  
canceled.

Change of Address Screen #6 notifies the user that their  
meter license has been withdrawn. In addition, it prompts the  
20 user for a new user name and password. The controls used for  
this screen, shown in FIG. 19H, are the same as those used in the  
user name screen of the Getting Started wizard. The client  
verifies with the server that the user name is unique. The  
client also verifies that the password meets the preferred basic  
25 criterion for example, of 6 characters minimum, with at least 1  
alphabetic character and 1 numeric character. Change of Address  
Screen #7 (shown in FIG. 19I) lets the user know that the final  
step is to go through the Registration Wizard. Selecting "Next>"  
launches the Registration wizard with all known fields being pre  
30 populated. In addition, the wizard preferably should not check  
for an available "slot", since the users are just using their  
existing "slot".

In one embodiment, the system includes a dialog box, which  
can change payment methods and be accessed from the Account  
35 screen. An exemplary interface for this screen is illustrated

1 in FIG. 20A. This screen preferably has the same functionality  
as the Select Payment Method screen of the Getting Started  
wizard, but formatted into a dialog box format. This dialog box  
is dynamic. The Select Payment Method screen of the Getting  
5 Started wizard is also dynamic. When the user first sees the  
dialog box, the only control that is available prompts the user  
for a Payment Type (i.e. Visa, MasterCard, American Express,  
ACH). If the user selects any of the credit card types, the  
screen dynamically builds to add the additional controls that are  
10 required to extract credit card information, as shown in FIG.  
20B. These controls are described in the Getting Started wizard  
above. If the user selects ACH, then the screen builds  
dynamically to contain controls that extract the ACH information  
that is necessary in order for the provider to bill an account.  
15 The specifics on these controls are discussed within the Getting  
Started wizard above, and are integrated into the dialog box  
setting, as shown in FIG. 20C.

In one embodiment, the system allows the user to change the  
service plan in which the customer is participating. This is  
20 accomplished through several screens which have many of the  
attributes of the Service Plan screens within the Getting Started  
wizard. This functionality is accessed when the user selects  
"Change Service Plan" from the Accounts screen. Once the user  
selects "Change Service Plan" from the Accounts screen, the  
25 Change Plan dialog box (shown in FIG. 21A) appears which has  
controls that are similar to those found on Service Screen #7 in  
the Getting Started wizard with one addition. Specifically, a  
line of text is added at the top of the screen that displays the  
name of the Service Plan that the user is currently signed up  
30 for. Once the user has selected "Ok" in the Change Plan dialog  
box, the Change Plan Contract dialog box, shown in FIG. 21B,  
appears. This dialog box preferably uses the same controls as  
screen #8 in the Getting Started wizard (described above), and  
displays the contract for the new service plan that the user has  
35 selected.

1 If the user selects the "I Accept" radio button on the  
Change Plan Contract dialog box, and then selects "Ok", the  
dialog box shown in FIG. 21C appears. The purpose of this dialog  
box is to communicate to the user when the change will come into  
5 effect. Selecting "Ok" completes the Change of Service Plan  
process. If the user selects the "I do NOT Accept" radio button  
on the Change Plan Contract dialog box, and then selects "Ok",  
the dialog box of FIG. 21D appears. This dialog box provides a  
warning to the user that unless the contract is accepted, the  
10 service plan will not be changed. If the user selects the "Go  
Back" button, this dialog preferably closes and the Change Plan  
Contract dialog should appear again. If the user selects the  
"Cancel" button, the change of plans process is canceled.

FIG. 21E depicts a dialog box that allows users to inform  
15 the provider when their email account names have been changed.  
This dialog box is accessible from the Account screen. The edit  
box control on this screen allows the user to enter a new email  
address. If the user enters an address and selects OK, the  
client uploads the new email address to the server. If the user  
20 selects Cancel, the operation is canceled. A Change Password  
option in the Account Screen is provided. The dialog box that  
is launched from this option is updated to reflect the password  
functionality as defined in the Getting Started wizard. In one  
embodiment, the password screen requires a new password type. The  
25 preferred requirements for the new password type are that the  
password be at least 6 characters in length, have at least 1  
alpha character, and at least 1 numeric character. A password  
recovery function allows a user to get a new password in the  
event that it is forgotten. This process does not require the  
30 user to interface with Customer Service. This process relies  
upon the secret code or key word phrase that the user provided  
in Service Screen #4 of the Getting Started (at the end of the  
Getting Started wizard, this keyword is uploaded to the server  
and stored as part of the user's personal profile).

35 The initial login screen provides the interface whereby the

1 users typically inputs their passwords. If a user enters  
incorrect information, a message such as the one shown in FIG.  
22A appears. As an added measure of security, if the user enters  
5 incorrect information ten times, the system keeps showing the  
user the above message even if the user enters the correct  
information. The user is forced to close and re-open the client  
to try again (although they won't know this) or contact Customer  
Support. If the user enters the information correctly, the  
confirmation message shown in FIG. 22B is displayed. The "OK"  
10 button closes the client. If the user never receives the email  
or the letter, they preferably have to repeat the process to have  
a new password sent out. The Customer Support (CS) Manager is  
able to modify the text of the Reset Sample email by going  
through normal operational email update procedures.

15 Once the user gets the temporary password, the user uses it  
to log in as normal. Once the server verifies that the password  
is valid, an additional check is made to determine whether the  
password that is provided is a temporary or long term password.  
If the password is a temporary password, then the client software  
20 launches the change password dialog box, and does not allow the  
box to be closed until the user enters the old password and a new  
one. A Message Log lists a history of the messages that a user  
has received from the provider. This log is accessible from the  
"Accounts" screen, and have the standard layout and capabilities  
25 of the other logs within the client.

FIG. 23 is an exemplary interface for a Withdraw Meter  
dialog box. Reason for withdrawal combo box allows the user to  
select a reason why he/she is withdrawing the meter. The user  
can type in their own response or select from any of the  
30 following standard responses; too expensive, difficulty  
connecting, too much lost postage due to printing mistake, no  
support for windowed or pre-addressed envelope, incompatibility  
with other software, requires printing of address and 'stamp'  
together, no longer have significant mail volume, poor customer  
35 support, and the like. Future Products used combo box helps

1 better understand why customers are terminating the provider's  
service. Specifically, this control allows the user to indicate  
what postal solution he/she will use in the future. The user can  
type in a response or select from the following: regular stamps,  
5 postage meter, or alternative Internet Postage product. A prompt  
appears in the combo box that reads "<type in or select one>",  
if the user chooses to type in a response. Address fields define  
where the refund check will go. These fields are pre-populated  
with the user's mailing address, but the user can make any  
10 desired changes to the address. Once all of these fields are  
filled in, selecting the OK button submits a request to withdraw  
a meter to the server. The server processes the appropriate  
withdrawal forms to the USPS on the user's behalf.

15 A Postal Meter License wizard is also provided. This option  
within the Options screen launches the new Registration wizard  
(which is a subset of the Getting Started wizard). The specific  
screens that make up the Registration wizard are shown in the  
process flow of FIG. 24. The screens numbers in the process flow  
of FIG. 24 refer to screens of FIGs. 10B-100 of the Getting  
20 Started wizard portion of this document. In order to change an  
address, the user selects the Change of Address wizard.

25 A Setup Digital Scales option is also provided. This new  
option launches the Setup Digital Scale dialog box shown in FIG.  
25A. This dialog box is used to select and configure digital  
scales. In this dialog box, Select a Scale combo box allows the  
user to select from a list of supported digital scales. This  
list checks for all scales that are supported, such as the  
Weightronics™ digital scale. Select COM port combo box allows  
the user to select which COM port the digital scale is attached  
30 to. The list includes all of COM ports on the user's system.  
Web Link button links the user to provider's site. The test  
button runs a test to make sure that the communication to the  
selected scale on the selected COM port is functional. If the  
test successfully communicates with the scale, the dialog shown  
35 in FIG 25B appears. If the test is unsuccessful, the dialog box

1 shown in FIG. 25C appears. The system supports the calculation  
of postal rates based upon zones. As a result, the system is  
able to support Express and Priority mailings. The implications  
of zone based postage are discussed in the printing section of  
5 this document.

Every "View History" dialog box adds print functionality,  
so that historical reports can be printed. Specifically, the  
View Postage Purchase History, View Postage Printed History, and  
View Messages History all add a Print button at the bottom of the  
10 screen. The number of events that are printed is defined by the  
purge control, which also controls the number of items that are  
displayed.

15 In one embodiment, the client software is web-enabled, i.e.,  
integrated with HTML to access web information content areas.  
For example, Primary Welcome, Online Store, Business Tools,  
Shipping Tools, and Online Support sections can easily be  
accessed using the HTML integrated client software. Welcome  
section provides a familiar place to orient the user and provides  
educational tips on how to use the client software. On-line  
20 stores such as Buy Supplies provide access to the on-line store  
and follows through with the purchase process. On-line Support  
furnishes live and HTML support through the component. Although  
HTML is used here as an example for web development languages,  
other web development languages may be used as they become  
25 available.

Support includes interactive chats. Shipping Tools page is  
integration with some shipping companies within the client  
software that enables the user to access the features and  
services available by a shipping company. Business Tools is a  
30 help and marketing vehicle for informing users about special  
services and special deals related to an on-line VBI provider,  
such as Stamps.com. This section can be used by a marketing  
department to promote special offers, supply information about  
the USPS.

35 The HTML integration provides for current and future

1 integration of a variety of web-based applications such as, on-  
line stores, shipping companies, on-line support and promotional  
deals related to the customers. Integrating the client software  
with HTML provides a seamless experience for most of the actions  
5 related to the applications.

In one embodiment, the HTML integration is carried out using  
IE Component. IE Component is a Microsoft™ Internet Explorer™  
(IE) Active X object that can be called within a program. The  
IE component is installed as part of the operating system or  
10 browser install, and resides on the client machine. The user may  
select a default browser for the client machine. This may be any  
one of many browsers. A HTML action invokes either the IE  
Component, or the default browser if the IE Component is not  
installed. The client software targets some pre-determined URLs  
15 for accessing pre-determined information contents. Web  
integration may also be implemented using JAVA based applets.

In one embodiment, only pages from approved domains appear  
within the client software. The approved domains are listed on  
a page residing on a web server. Pages outside of the approved  
20 domains launch the default browser. The page is retrieved only  
at the first connection of the client to an on-line state, and  
resides in memory. Preferably, no pages defined as a home page  
take the user to a non-approved domain. The format of the page  
is standard HTML, except each URL is separated by a carriage  
25 return. If multimedia is used in any way within content, there  
may be an alternative way to view the content as static HTML.  
A link to download the multimedia reader, i.e. plug-in, is also  
available. Using Dynamic HTML (DHTML), multimedia content may  
be fully integrated with the client system.

30 Pop-up windows are of a size that allows the application to  
be viewed in the background. These pop-up windows are considered  
modeless, i.e., a user does not have to complete the action to  
return to the application. However, in some cases, a pop-up  
window may have a modal function. These windows typically allow  
35 navigation only in an area consistent with a respective content.

1 At the end of that content and on every page, there is an option  
to close the window, shown graphically or as a hyperlink. In  
these windows, scrolling is typically kept to one screen.  
Typically, the windows do not link outside approved domains.  
5 Links outside of the domains launch the default browser with full  
functionality. Pop-up windows are preferably used for  
functionality, i.e. lookup tables, or to illustrate a step-by-  
step process. Typically, closing a pop-up window does not close  
the application, and closing the application does not close the  
10 pop-up window.

Preferably, the content for primary sections stays within  
that section. For example, Customer Support and Feedback have  
no content links to areas outside their sections for On-line  
Support. Advertisements and promotions within On-line Support  
15 is considered non-primary content. Welcome may have promotions,  
but they are not hyperlinked, except to launch the default  
browser. Business Tools and Buy Supplies can have promotions,  
but once outside of the primary navigation they spawn the default  
browser. Any search forms or other navigation that allows free-  
20 form surfing through the site is preferably removed.

FIG. 26 is an exemplary process flow for accessing a  
function or web page by an off-line user (block 2602). If the  
user clicks on the left navigation, and it is the Welcome Screen,  
the page is displayed. If the desired function is not the  
25 Welcome screen, the user accesses the function by clicking on an  
item or logging in, as shown in block 2604. The application then  
checks to see if the accessed function is a Web function, as  
shown in block 2606. If it is a web function, the application  
displays a dialog in block 2612 that asks if the user wants to  
30 connect or stay offline. If the user clicks Connect, the  
operating system activates the default dialing action and  
connects to the Internet, as shown in blocks 2614 and 2620. If  
the page is an approved URL, the page is displayed within the  
client. If the users decides not to connect to servers and the  
35 accessed function is a Win32 function (block 2616), an error



1 window is displayed. If the accessed function is not a Win 32  
function and the user has a browser, such as IE (block 2618), and  
the accessed function is the Welcome page (block 2624), an  
embedded HTML Welcome page is displayed, as shown in block 2626.  
5 Otherwise, an error window is displayed (blocks 2622 and 2628).  
The Welcome screen is a complete HTML page embedded within the  
client.

In one embodiment, if the user clicks Stay Offline, the  
system displays the last HTML page viewed in that navigational  
10 section. If there is no page cached for that section or that  
section hasn't been accessed on-line, a watermark page for  
offline mode is displayed. If the function is a Win32 function,  
the client checks if it is a function that has to be performed  
on-line. If the function has to be performed on-line, the  
15 application shows a dialog that asks the user to connect. If the  
user clicks Connect, the operating system activates the default  
dialing action and connects to the Internet. The application  
software automatically goes on-line in this scenario. If the  
users click Stay Offline, the application does not go forward,  
20 and the dialog for the corresponding action is displayed but does  
not take action.

If the user does not have the IE Component, the Welcome  
Screen is displayed as a bitmap screen. If the user clicks on  
the left navigation, and it is the Welcome Screen, it displays  
25 the page. If it isn't, the application checks if it is a Web  
function. If it is a web function, the application spawns the  
default browser. The left navigation indicates the selection,  
and the watermark with no indication type is displayed. If there  
is no browser on the system, or the browser is damaged, a dialog  
30 is displayed that says the function requires an Internet Browser,  
and the application could not find one on the system. All pages  
requiring a browser display a watermark screen indicating there  
is no default browser.

FIG. 27 is an exemplary process flow for accessing a  
35 function or web page by an on-line user (block 2702). If the

1 user has a browser (block 2704), a Welcome Screen which is a HTML  
page, partially embedded and partially dynamic is displayed, as  
shown in block 2706. If the user clicks on the left navigation,  
and it is the Welcome Screen, the page is displayed. If the user  
5 is on-line (block 2710) and the page is an approved URL (block  
2712), the page is displayed within the client, as shown in block  
2714. If not, in block 2716, the application launches the  
default browser and the page is displayed there. If an error  
occurs with the page, an error page embedded within the client  
10 is displayed. Preferably, the page has a logo in the top left  
corner and text describing the error generically, and is  
contained within the Win32 portion of the client.

If the user does not have a browser (block 2704), the  
Welcome Screen is a bitmap screen. If the user clicks on the  
left navigation menu item (block 2720), and it is the Welcome  
15 Screen, the software displays the page. If the menu is not the  
Welcome Screen, in block 2722, the application checks if the item  
is a Web function. If it is a web function, the application  
spawns the default browser, as shown in block 2724. The left  
20 navigation indicates the selection, and the watermark is  
displayed. If the menu item is not a web function, a Win32  
function is displayed in block 2726.

In one embodiment, when a user logs on to their client  
software, the following primary navigation options invoke an HTML  
25 action: Welcome, Buy Supplies, On-line Support, Shipping Tools,  
and Business Tools. If a browser such as, the IE Component is  
installed, clicking on a primary navigation action launches the  
component. The client software displays the tab of the activated  
primary navigation action. If the IE Component is not installed,  
30 clicking on a primary navigation action launches the default  
browser. The client displays the tab of the activated primary  
navigation action. The client displays a bitmap watermark with  
a logo and the associated illustration centered within the  
content area.

35 In the background, the client software transmits extra

1 information as part of the handshake process. This information  
includes name/value pairs as part of the process that is added  
to the query string (standard CGI communication). A page is  
retrieved only at the first connection of the client to an on-  
5 line state, and resides in memory. The format of the page is  
standard HTML, except each URL is separated by a carriage return.

Each primary navigation action that generates a HTML action  
uses its own IE component to track state. Four IE components are  
potentially active for the application: Welcome, Buy Supplies,  
10 On-line Support, and Business Tools. If the user navigates  
within a primary navigation action (e.g., Buy Supplies), the  
client software uses the corresponding IE Component. If the user  
clicks on the same primary navigation action, the corresponding  
IE Component targets the home page of that primary navigation  
15 action. If the user changes from one primary navigation action  
to another, the client software switches to the corresponding  
components, e.g., from the Buy Supplies IE Component to On-line  
Support IE Component. The IE Component restores the state of the  
last time that IE Component was activated during the application  
20 session. If the user has never used the IE Component for that  
action during the session, the IE Component uses the primary home  
page for that action. No content within one primary navigation  
action targets the content in a separate primary navigation  
action.

25 In one embodiment, a complete HTML Window, using the IE  
Component replaces the Win32 secondary navigation with a long tab  
that contains on the left and the title of that page on the far  
right. If the user is on a secured page and the page is loading,  
a security lock and Loading Page appears. If the user is on a  
30 secured page and the page is not loading, a security lock only  
appears. This security lock appears on all functions of secure  
actions with Win32 and HTML. If the user is on an unsecured page  
and it is loading, only Loading Page appears. If the user is on  
an unsecured page and it is not loading, no status is shown.

35 Browser navigation includes the following buttons: back,

1 forward, stop, refresh, print and launch default browser (full  
browser). Back button returns to the previous page. This button  
is disabled when there is no previous page to return to. Forward  
5 button goes to the next page, if cached. This button is disabled  
when there is no next page cached. Stop button ceases the page  
transfer from the server. Refresh button reloads the current  
HTML page. Print button activates a print dialog to print the  
current HTML page. This action only prints the content frame,  
10 or the HTML page in focus. Launch Default Browser button sends  
the current URL to the default browser and launches that browser  
in the foreground, with the client in the background. Tool tips  
are enabled so when the users hover over the navigation, they are  
identified.

15 In the default browser, the information used in the screen  
header are not transmitted to outside applications. The  
resulting HTML page in the default browser has navigation  
consistent with the external website. Secondary Web Navigation  
appears as such: active items are indicated by a blue arrow,  
inactive items are indicated by a red arrow. The content frame  
20 contains one resulting page. Download progress of an HTML page  
is also displayed. The progress text is Loading Page (xx%), xx  
being the progress percentage. All pages using sensitive  
information are transmitted by SSL. There is an indication that  
the page is secured through SSL by a lock graphic within the  
25 lower status bar of the application. Preferably, the default  
browser does not target back to the client.

30 In one embodiment, the client software is capable of  
supporting outsourcing on-line stores to partners. All pages  
within this section are encrypted with SSL. This page is  
accessible from the left menu and is the primary page when a user  
clicks on the Buy Supplies left button. The site is preferably  
contained within one domain. The client software is auto-logged  
in to the store. During the registration process for an on-line  
store, user information are uploaded and made available in the  
35 on-line store. For example, if it is the user's first time entry

1 into the store, the store creates an automatic login and  
password, and stores a cookie on the client's system. This  
cookie can be used in future sessions in both the IE component  
and with IE, if the user is using IE as their default browser.  
5 The name and password of the cookie are encrypted.

The How To's page is accessible from the left menu and is  
the primary page when a user clicks on the On-line Support left  
button. The content mostly is Customer Support and Feedback.  
Some actions target shipping functionality. Customer support is  
10 accessible from the secondary top menu after a user clicks on the  
On-line Support left button. Feedback is accessible from the  
secondary top menu after a user clicks on the On-line Support  
left button.

Shipping Tools is accessible from the left menu, the  
15 Shipping Tools home the default page. An exemplary Shipping  
Tools screen is depicted in FIG. 28. The content includes Quick  
Price, Price It, Track It and Help. Price it button compares  
detail prices between different shipping options, carriers and  
services. Track it, takes a tracking number(s) and provides  
20 location information. Ship it button pre-processes a package  
before the package is mailed. Other elements on the home page  
include promotional items about shipping. Any content that does  
not target Quick Price, Price It, Track It and Help launches the  
default browser.

25 FIG. 29 is an exemplary screen for Business Tools. Business  
Tools screen is accessible from the left menu. The content  
includes Time-Saving services in Personal Mailroom and Insurance,  
On-line Supply Ordering, and Package Pickup. In this embodiment,  
the client software has the ability to provide additional postal  
30 services to customers. In one embodiment, certified mail,  
delivery confirmation, insurance, registered mail, and return  
receipt are provided. When a service is selected, the client  
automatically calculates the amount due for the service or  
services, based on some business rules. For example, a business  
35 rule for Certified mail provides the sender with a mailing

1 receipt. This service can be combined with return receipt and  
made available for purchase at an additional fee. Certified mail  
can only be used with First-Class Mail and Priority Mail items.  
A business rule for Delivery confirmation provides information  
5 about the date and time of delivery or attempted delivery. When  
using this service, mailers may retrieve delivery status through  
the Internet or a toll-free number. Delivery confirmation can  
be used with Priority Mail and Parcel Post mailings, and may also  
be combined with insured mail or registered mail. A business  
10 rule for Insurance service provides coverage against loss or  
damage during the shipping or mailing of an item. Insured mail  
can be combined with delivery confirmation, and return receipt.

An exemplary business rule for Registered mail provides  
protection and security for valuables. This service is available  
15 only for items paid at Priority Mail and First-Class Mail rates,  
and may be combined with COD, restricted delivery, or return  
receipt. Postal insurance is provided for articles with a  
declared value up to a maximum of \$25,000. Only items with no  
declared value may use registry service without insurance. An  
20 exemplary business rule for Return Receipt service provides a  
mailer with evidence of delivery, and also supplies the  
recipient's actual delivery address if it is different from the  
address used by the sender. A return receipt may be requested  
before or after delivery. Return receipt is available only for  
25 use with Express Mail, and can be combined with certified mail,  
mail insured for more than \$50, or registered mail.

FIG. 30 depicts an exemplary Special Services Dialog. This  
dialog can be accessed from Print Postage. As shown, the  
introduction text reads "Select the Special Services that you  
30 would like for your mail piece. Please note, when using a  
Special Service you will need to fill out the appropriate USPS  
form. For more information, click on the Service's corresponding  
link." The group box includes the following check boxes.  
Certified Mail includes the text from USPS Form 3800. This text  
35 is highlighted and points to the relevant Help topic. Return

1     Receipt has the text from USPS Form 3811. This text is  
highlighted and points to the relevant Help topic. Delivery  
Confirmation includes the text from USPS Form 152. This text is  
highlighted and points to the relevant Help topic. All Help  
5     topic show an image of the respective form. Registered Mail  
includes the following edit box titled Mail Value.

Under this checkbox the text USPS Label 200 is located. This  
text is highlighted and points to the relevant Help topic.  
Insurance includes the Mail Value edit box. Under this checkbox  
10     the text USPS Label 200 is located. This text is highlighted and  
points to the relevant Help topic, and the Help topic includes  
an image of the form. A Help button is located at the bottom of  
the Special Services Dialog.

When running this dialog, the client software checks the  
15     selected mail piece in the Print Postage dialog. If the mail  
class is First Class, the Delivery Confirmation checkbox and the  
Return Receipt checkbox are disabled. If the mail class is  
Priority Mail, the Return Receipt checkbox is disabled. If the  
mail class is Express, the Registered Mail checkbox, the  
20     Certified Mail checkbox, and the Delivery Confirmation checkbox  
are disabled. If the mail class is Parcel Post, the Registered  
Mail checkbox and the Certified Mail checkbox are disabled. When  
the user selects Certified Mail, Return Receipt, or Delivery  
Confirmation, the respective checkbox is checked. When the user  
25     selects Registered Mail, or Insurance, the respective checkbox  
is checked and the cursor is pointed to the entry box.

If the user insures the item for \$50 or more, the client  
checks to see if the mail piece was parcel Post. If yes, the  
Return Receipt checkbox is enabled. If the user insures the item  
30     for less than \$50, the Delivery Confirmation checkbox and the  
Return Receipt checkbox are disabled. If the user clicks OK, the  
client checks to see which services are selected. If Certified  
Mail is selected, the appropriate amount is added to the total.  
If Return receipt Mail is selected, the appropriate amount is  
35     added to the total. If Delivery Confirmation is selected, the

1 appropriate amount is added to the total. If Registered mail is selected, the client software calculates the cost of the special service based on the USPS rate table for Registered Mail.

5 If Insurance is selected, the client calculates the cost based on some rate tables, such as the USPS rate table for Insurance, and checks the dialog for valid Registered Mail. If the user enters a value outside of the acceptable range, an error message appears indicating: "The value of registered items must be between \$0 and \$25,000." The client checks the dialog for  
10 valid Insurance. If the user enters a value outside of the acceptable range, an error message appears indicating: "The value of the item you are insuring must be between \$0 and \$5,000." If all values are valid, the dialog is closed. The client then Passes the total amount for the services back to the Print Postage dialog and keeps the values in state until user has  
15 printed postage.

In one embodiment provided special services include Certificate of Mailing, Certified Mail, Collect on Delivery (COD), Delivery Confirmation, Insured Mail, Money Order, Return  
20 Receipt for Merchandise, Registered Mail, Restricted Delivery, and Return Receipt. Certificate of Mailing provides evidence of mailing (but not evidence of receipt). It is purchased at time of mailing. Certified Mail provides the sender with a mailing receipt. A record is kept at the post office of delivery. A  
25 return receipt can also be purchased for an additional fee. Collect on Delivery (COD) allows mailers to collect the price of goods and/or postage on merchandise ordered by addressee when it is delivered. COD service can be used for merchandise sent by First-Class Mail, Express Mail, Priority Mail, and Standard Mail  
30 (B). This service may be combined with registered mail. Delivery Confirmation provides information about the date and time of delivery or attempted delivery. Mailers may retrieve delivery status through the Internet or a toll-free number. This service is available for Priority Mail, Parcel Post, Bound  
35 Printed Matter, Special Standard Mail, and Library Mail.



1 Insured Mail provides coverage against loss or damage.  
Coverage up to \$5,000 for Standard Mail (B) as well as Standard  
Mail matter mailed at Priority Mail or First-Class Mail rates.  
5 For items insured for more than \$50, restricted delivery and  
return receipt service are also available. The amount of  
insurance coverage for loss is the actual value, less  
depreciation. Money Order provides safe transmission of money.  
Return Receipt for Merchandise provides the sender with a mailing  
10 receipt and a return receipt. A delivery record is kept at the  
post office of address, but no record is kept at the office of  
mailing. Registered Mail provides maximum protection and  
security for valuables. This service is available only for items  
paid at Priority Mail and First-Class Mail rates and may be  
15 combined with COD, restricted delivery, or return receipt.  
Postal insurance is provided for articles with a declared value  
up to a maximum of \$25,000.

Restricted Delivery permits a mailer to direct delivery only  
to the addressee or addressee's authorized agent. The addressee  
must be an individual (or natural person) specified by name.  
20 This service is available for certified mail, COD, insured mail,  
or registered mail. Return Receipt provides a mailer with  
evidence of delivery. This service also supplies the recipient's  
actual delivery address if it is different from the address used  
by the sender. A return receipt may be requested before or after  
25 delivery. This service is available for Express Mail, certified  
mail, COD, mail insured for more than \$50, or registered mail.

In one embodiment, the present invention provides address  
override option by the AMS. That is, if the address entered or  
chosen from an address book by the user cannot be successfully  
30 validated, the USPS Address Matching Database returns a valid  
city, state, and ZIP information. Instead of rejecting the  
incorrect addresses, AMS provides the user with an option to  
override the incorrect address by concatenating the validated  
city, state, and ZIP information and the original street  
35 information. Also, AMS returns the override address in the

1 address book format that can be easily stored in the respective address book.

FIGs. 31A-31G depict exemplary interfaces for address override. After a user logs on to the client system and clicks  
5 on "Print Postage" tab within Welcome screen, the exemplary interface of FIG. 31A is shown. The user then enters an address, for example, 123 Address Override St. Los Angeles, CA 90015. Suppose that this entered address only matches a real address with respect to the last line (city, state & zip code). The user  
10 then selects a mail class (e.g., First-Class Mail radio button) and clicks "Print Sample..." or "Print Postage...". As a result, the dialog box shown in FIG. 31B is shown providing to the user the options of accepting the overridden address ("Accept"), canceling out of the dialog ("Cancel"), or editing the result for another try at cleansing the address ("Edit"), as shown by the available  
15 buttons shown in the dialog box of FIG. 31B. The "Edit" button takes the user back to the interface screen of FIG. 31A. An option of saving the address changes to the address book is also provided in interface of FIG. 31B.

20 For the case that the user is utilizing an address book, the exemplary interfaces are shown in FIGs. 31C-31G. After a user logs on to the client system and clicks on "Addresses" tab, the exemplary interface of FIG. 31C is shown.. The user then selects an address book from the "Select Address Book:" drop-down list  
25 box, clicks on "New Contact..." and enters the address information. Similar to the previous example, only the city, state & zip code match. The user then clicks on "Verify: to get the "Address Override" dialog box, as shown in FIG. 31E. Again, in the resulting "Address Override" dialog box the user can accept the  
30 overridden address, cancel out of the dialog, or edit the result for another try at cleansing the address.

In one embodiment, the present invention is capable of supporting multiple address (contact) verifications, as depicted in FIGs. 31F-31G. From "Print Postage," the user clicks on  
35 "Address Book" icon. The user then selects multiple contacts

1 from an address book with at least one address being an address  
override example and clicks "OK", as shown in FIG. 31F. As a  
result, the "Address Override" dialog box of FIG. 31G is shown  
for the contact(s) that do not match the AMS database but do  
5 match the last line address (as in the examples above). An  
option of saving the address changes to the address book is also  
provided in interface of FIG. 31G.

It will be recognized by those skilled in the art that  
various modifications may be made to the illustrated and other  
10 embodiments of the invention described above, without departing  
from the broad inventive scope thereof. It will be understood  
therefore that the invention is not limited to the particular  
embodiments or arrangements disclosed, but is rather intended to  
cover any changes, adaptations or modifications which are within  
15 the scope and spirit of the invention as defined by the appended  
claims.